



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>



Arbor Day and Wisconsin Trees

Dept. of Public Instruction, Wisconsin

ARBOR DAY

AND

WISCONSIN TREES.

A CIRCULAR

ISSUED BY THE

STATE SUPERINTENDENT

OF

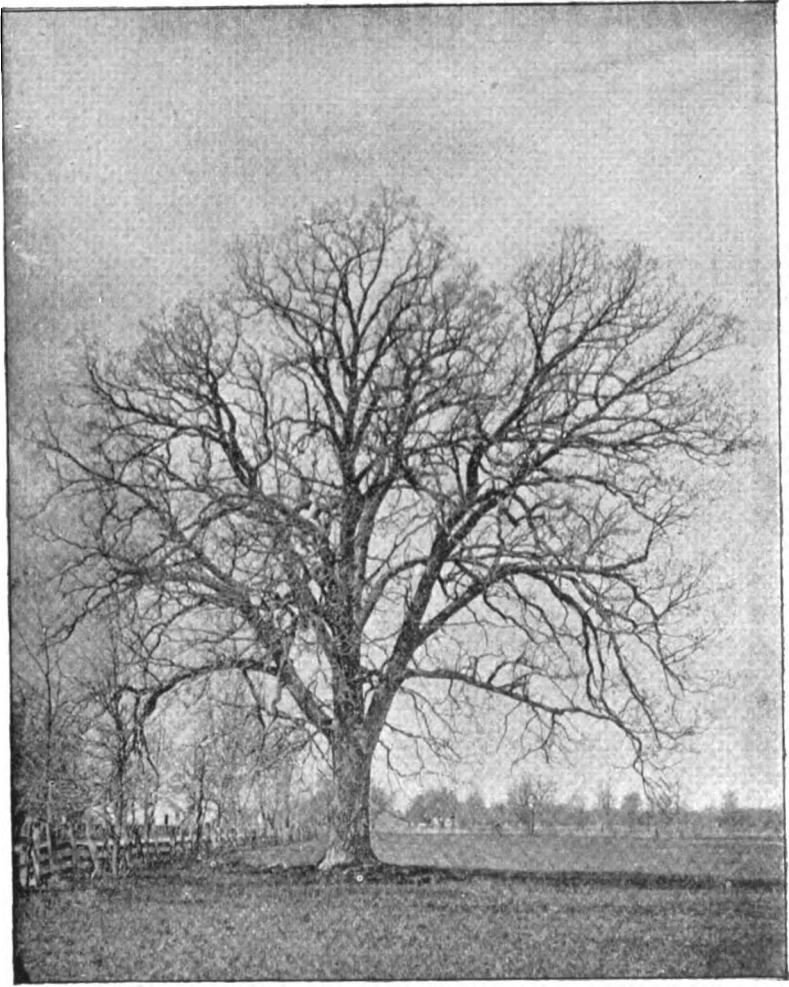
WISCONSIN

FOR THE USE OF THE

Officers, Teachers and Children

OF WISCONSIN SCHOOLS.

MADISON, WIS.,
DEMOCRAT PRINTING CO., STATE PRINTERS,
1893.



A WISCONSIN OAK.

The great oak pictured above stands about three miles west of White-water, near the road to Janesville, on the farm of Miles Cravath. Its trunk girths at the ground 18 feet and 6 inches. Three feet higher, it measures 12 feet and 3 inches; and the cylindrical stem and ponderous limbs are perfectly sound, the tree being still in vigorous health. Its age can only be guessed, but it must have been already a fine specimen before Marquette floated his canoe in Wisconsin waters. It is presented as a typical bur oak (*Quercus Macrocarpa*), in the sense of showing what this tree becomes under the most favorable conditions, plenty of room, deep soil, and immunity from accident. Its great symmetry and the lack of some of the angularity of the average bur oak, are evidences of its unbroken prosperity.

STATE OF WISCONSIN.

Arbor Day Proclamation.

BY THE GOVERNOR.

In compliance with a law whose results are now shown in the added beauty of many of our school grounds and public parks, of our highways and our homes, I, George W. Peck, governor of the state of Wisconsin, do hereby designate Friday, April 28, as Arbor Day for 1893. I earnestly recommend all citizens of our great commonwealth to unite with the officers, teachers and pupils of the schools in planting trees and beautifying public and private grounds. No unsightly placards announcing penalties for trespass, no petty ordinances prescribing fines, are as effective in restraining vandalism as a united observance of this beautiful holiday, when the youth join with their elders in adorning public grounds and caring for the trees and flowers which they have helped to plant.



In testimony whereof, I have hereunto set my hand, and caused the great seal of the state of Wisconsin to be affixed. Done at the capitol, in the city of Madison, this twenty-third day of February, A. D., 1893.

By the governor,

GEO. W. PECK,
Governor.

T. J. CUNNINGHAM,
Secretary of State.

THE STATE TREE OF WISCONSIN.

The men of Wisconsin hold elections every spring and every second autumn. Why should not the boys and girls of the state hold an election occasionally? If the men may select a governor, why may not the children choose a state tree?

A proposition to hold such an election has met so much favor that arrangements have been made to have one in the schools of Wisconsin on Arbor Day in 1893. Every child in the schools, regardless of age or sex, will be given an opportunity to vote. As far as possible the forms of our excellent state election law should be followed, with election notices, inspectors and clerks of election, and booths where voters may mark their ballots without any spying from their neighbors. All votes will be counted however, even if these forms are not followed, if the teacher will report them to the county superintendent. A blank for such a report will be sent with this circular.

As the men discuss the merits of the candidates for governor so may the children discuss the merits of the favorite trees. All the more common native trees should be carefully examined and their beauties of limb and leaf, flower and fruit pointed out. What are the special excellencies of their woods? Are they good for fuel or fencing, for wagon bodies or wheels, for chairs or beds, for the floors or roofs or sides of houses, for the handles of axes or for oars, for matches or lead pencils, for picture frames or fine desks, for ties for railroad tracks, for telegraph poles, for the making of pulp for the paper mills, for croquet balls or mallets, or for any other of the countless uses to which wood is put?

How do they differ in grain, color and density of wood, in leaf and bark, in root and branch, in flower and fruitage?

There are numberless questions to be asked about trees, but the information to be gained is secondary in value to the habit of going to the trees themselves to find the answer.

In the country districts all the young people of the neighborhood who have attended the school within the past two or three years, and are willing to take part in the Arbor Day program, or to help plant the trees or beautify the grounds, may vote if the teacher and pupils wish.

In districts where the spring term of school does not commence till May 1, or when April 28 is too early to secure the best results from the planting of trees, teachers are advised to observe Friday, May 12, and county superintendents will receive and count the votes of their schools.

OLIVER E. WELLS.

State Superintendent.

MADISON, WIS., March 15, 1893.

SUGGESTIONS TO TEACHERS.

The interest aroused in the schools of this state by the observance of Arbor Day shows that children quickly respond to any appeals to beautify their school grounds, to plant and care for trees that will benefit their fellowmen, and that they enjoy the study of the living objects of the out-of-door world in spring time. No figures can show the benefits flowing from this work, but it is interesting to know that nearly all the city and village schools of Wisconsin celebrated the day last year and that 2,408 district schools planted 18,343 trees. Thousands of schoolhomes in Wisconsin are more attractive as the result of the interest in this beautiful holiday during the past two years.

Experience has, however, shown the need of a word of caution in one respect. Many teachers have not given enough attention to the work of selecting and transplanting trees. The rules and suggestions given in this circular should be carefully followed. It is not enough that children should be taught to enjoy planting trees—they should be taught to plant and care for them properly.

The general purpose and spirit of this circular are so closely akin to those of the circular issued by this department last year that the following suggestions to teachers are repeated.

The world will soon be fresh and green, throbbing with many forms of re-kindling life. As Nature dons her new dress and the fields and woods invite us into the open air, the children are stirred with the spirit of the season. Their curiosity is now easily aroused and should be excited rather than repressed. Draw them to the study of nature. When their interest is aroused you will often find them leading you into new fields. Do not be afraid to follow. This work does not find its fulfillment simply in the answering of questions. Its object is to awaken curiosity and lead to study. In the "Manual of the Elementary Course of Study" you will find many hints as to how you may conduct this study of nature. Many plans and methods will occur to you when you become interested. Only take pains to study the objects themselves, and be content to learn what these objects teach—no less, no more—and you will be surprised to find what a bright and interesting world you live in.

This circular is intended to give you materials to use in stimulating this love of nature in the minds of the pupils. There are interesting selections that you may read to the younger pupils, or have them read. Others that they may commit to memory. There are charming extracts from the writings of the great prose writers and poets that should be read or learned by the older pupils, that the spirit of the writers may mould and refine their lives. There are hints as to the care of the school grounds and materials for Arbor Day exercises.

Do not wait for Arbor Day to commence this work. Begin with the early spring to clear the school yard and to teach the children to read the book that is spread under the open sky. Arbor Day should not be a spasmodic attempt at tree planting. It should be the culmination of a

growing interest in Nature, and the planting of the trees, if they are necessary, should be the crowning effort in making the school grounds neat, homelike and attractive.

In this work of beautifying the school grounds, you must first get the children at work. Every child who helps becomes a warm friend of the movement. Through the children get the parents and school officers. First clear the grounds of all rubbish, get the wood neatly piled, the yard and roadside clean and neat, the stumps and stones removed, so that you can see what possibilities there are in the premises. Are there unsightly out-buildings? Can they be cleaned, repaired and hid from public view by evergreens? Is there a nice place for a flower bed? Is the roadside bare of trees? Is there an opportunity for a lawn or for shade trees outside of the regular play grounds? Can you make the school-room itself more inviting by the expenditure of a little labor or money? As you study the possibilities, you will see new opportunities, and as your enthusiasm grows it will become contagious.

In making arrangements for Arbor Day exercises, give place to as many of the children as possible. Give the smaller children very brief selections to learn, but give each one something. This will help draw the parents.

A program is given elsewhere and an abundance of materials so that it may easily be changed to suit your special needs.

The Barefoot Boy.

* * * * *

O! for boyhood's painless play
Sleep that wakes in lasting day,
Health that mocks the doctor's rules,
Knowledge never learned of schools,
Of the wild bee's morning chase,
Of the wild-flower's time and place,
Flight of fowl and habitude
Of the tenants of the wood;
How the tortoise bears his shell,
How the woodchuck digs his cell,
And the ground-mole sinks his well;
How the robin feeds her young,
Where the oriole's nest is hung;
Where the whitest lilies blow,
Where the freshest berries grow,
Where the groundnut trails its vine,
Where the wood-grape's clusters shine;
Of the black wasp's cunning way,
Mason of his walls of clay;
And the architectural plans
Of gray hornet artisans!—
For, eschewing books and tasks,
Nature answers all he asks;
Hand in hand with her he walks,

Face to face with her talks,
Part and parcel of her joy—
Blessings on the barefoot boy!

* * * * *

Cheerily, then, my little man,
Live and laugh, as boyhood can!
Though the flinty slopes be hard,
Stubble-speared the new-mown sward,
Every morn shall lead thee through
Fresh baptisms of the dew;
Every evening from thy feet
Shall the cool wind kiss the heat;
All too soon these feet must hide
In the prison cells of pride,
Lose the freedom of the sod,
Like a colt's, for work be shod,
Made to tread the mills of toll,
Up and down in ceaseless moid;
Happy if their track be found
Never on forbidden ground;
Happy if they sink not in
Quick and treacherous sands of sin.
Ah! that thou couldst know thy joy.
Ere it passes, barefoot boy!

—WHITTIER.

TREES AND TREE PLANTING.

C. A. HUTCHINS,

ASSISTANT STATE SUPERINTENDENT.

"As the days of a tree is the life of my people."

Arbor Day approaches again, and it is wise to recall the purpose for which it was established, and to devise plans by which we may celebrate it worthily. It had not for a main purpose to give us a vernal holiday, though holidays are all too few in the American calendar. We are wont to forget that "all work and no play makes Jack a dull boy," and that brain and brawn are enriched by recreation. To the drowsy pupil a day in the open fields, or in the silent scented woods may bring mental awakening. But the day was set apart for tree culture. The state department has culled from the fields of thought selections in song and story, and brings them with its greetings as a contribution to your gala day. It has asked those who are deep in the secrets of nature to tell over the stories that the trees and the flowers, the birds and the brooks have told to them. Birds and brooks, trees and flowers are leaves from the book that the Great Master has written for all. If you learn to love them you will learn to love all beautiful things, "all things that are pure, all things that are of good repute." And so this festival, designed to awaken an appreciation of the beauty and grandeur of tree and forest and of the worth of the wealth that woods confer may ennoble and enrich your lives.

But as we learn to know and to prize the beauties and marvels that lie outspread everywhere under the open sky we shall wish to share our pleasures with our fellows of to-day and with those that may come after us. Only a small part of the blessings of life are of our own making. Each generation is enriched by the garnered wealth of the generations that have gone before. Nature reserved for each of us an inheritance of delight which we have no right to squander, which it is ours to enjoy and transmit. Of us, as of all, she requires her own with usury. To preserve and augment the common inheritance is our noblest duty, and may become our keenest pleasure. In God's own treasure house there is no higher meed for man than the satisfaction born of work well done. If we would know something of the deep debt that we owe to the past, let us look about us to see how many of the comforts and elegancies of life are the gift of the tree. Let us remember that the tree that has so often sheltered us from the chilling blasts of winter, or from the heat of the summer's sun, may be older than our fatherland. There are monarchs in our forests that hold in their circling rings the dew and the sunshine of perished centuries; that were rocking "on their bowery tops all throats that gurgle sweet" when the keels of Columbus were fretting a pathless sea in search of unknown lands. We do well to stand with bared brow in the presence of trees that were old when our fathers were young, and

will be young when our children are old; that have stood in their places while they have beaten back the blasts of a thousand winters. But trees are valuable not only for beauty of form and foliage, but for their contributions to every field of human industry, to salubrity of climate and fertility of soil. From the sled to the palace car, from the kennel to the mansion there is no want to which trees do not minister. They toil not, neither do they spin, and yet they pour into the lap of industry wealth that can be estimated only by figures that measure the journey to distant stars. Neither toil nor sweat of husbandman ministered to their silent growth. Winds wafted or waters floated their baby germs to the seed-beds which the sky had prepared. The dew and the sunlight, the early and the latter rain, the frosts of winter and the heat of summer were their only gardeners. And yet what structures reared by human hands were ever so grand as they? What product of human toil ever ministered to so many wants? What craftsman's skill ever wrought forms of such surpassing beauty? From the willowy shrub to the giant tree every form and phase of forest life is entrancing. Look again at the royal oak, the graceful elm and the queenly maple as, in the complete beauty and majesty that the ripening years have brought, they lift their leafy crowns to the upper air. What a wonderful youth is theirs! They have seen centuries come and go; they have shaken down their leafy coverings to protect their nestling roots from the frosts of a hundred winters. And yet they bate no jot of the beauty and vigor of their early prime. Follow the noonday rests or perfumed paths of the forest when the golden showers of sunlight are falling on field and wood. Far above you the silent sentinels of the forest lift their leafy shields, baffling and beating back the fiercest shafts of the summer sun, here and there revealing as by a rift in the clouds the tracery of their green foliage against the clear blue sky; here and there allowing the mellowed light to fall about you in emerald streaks and soft blue billows. Beauty and majesty are all about you. The leafy carpet at your feet. The pliant sapling at your side. The mossy trunks of the monarchs of the wood. Waves of billowy green away above you in the stainless blue. Only amid the rugged majesty of the silent mountains, or listening to the solemn music of the deep voiced sea may you find such solace for the sorrows of life. The hand that heaved the firmament reared these lofty columns and spread their leafy canopies on high. In the provision of His care the benefactions of the tree are as numerous and as widely scattered as are the leaves of the forest. In our own country the yearly contribution of trees to the nation's wealth exceeds a billion dollars; equal in value to the combined worth of the crops of wheat, rye, oats, barley, potatoes, cotton and tobacco, greater than all our exports, and more than ten times greater than the produce of all our gold and silver mines. If the figures that measure the worth of the lumber harvest are bewildering, the contributions of forests to the general economy of the globe are incalculable. Forests increase the humidity of the air and of the soil, mitigate the extremes of heat and cold, afford shelter to man and beast, enrich the soil on which they grow, feed springs and rivulets in the hot and thirsty summer, absorb the poisonous exhalation of the atmosphere and pour back into it vast quantities of moist, pure air.

Rain falling on forest land is conducted quickly by leaves, branches and trunks to ground rendered spongy by decaying foliage. Here it is entangled among fallen leaves, soaks slowly along the roots to the deeper portions of the soil, where it is secure from the evaporation that so

quickly robs the open fields of moisture. It is to the water imprisoned in these leafy reservoirs that we are indebted for the springs and rivulets that make glad the heart of every living thing. Strip the high forest lands of their trees, and springs, rivulets and brooks will fail in the arid summer and every beast of the field, and every bird of the air will languish for want of them. You know that the birds love trees. Did you ever think that the brooks love them also? Only the mountains and the wooded lands can keep the brooks alive when the spring freshets are over and the long parching days of summer come. The silver throated songsters will hie them away, the flowers of the field and wood will fade and die, and the beauty and melody of summer will disappear when all the hillsides and uplands are uncovered. In the treeless plains of the West the stillness is so deep and dreadful that you would be grateful for anything that would break the monotony of everlasting silence. Think of a land where the rustle of leaves, the murmur of brooks, the song of birds and the hum of insects are never heard! You know how grateful is the shelter that a forest or even a narrow belt of timber affords. In Wisconsin no mountain wall protects from the fierce winds of winter or the hot, parching blasts of summer. Only the green forest areas shelter hillside and valley from the desolating sweep of winter and summer winds. By denuding these areas we shall increase the extremes of heat and cold, and rob the soil of half its fertility. Europe and Asia furnish abundant examples of the blight and sterility that follows the wanton destruction of forests. In Palestine and Persia, in Assyria and Egypt flocks crop a scanty herbage where husbandmen once gathered abundant harvests. Ancient seats of civilization are now occupied by nomadic tribes, and lands once flowing with milk and honey have been converted into dust and ashes by the uncovering of their forest areas. Sicily, once the grain reservoir of the world, long ago was despoiled of its trees, lost the fertility of its soil and the salubrity of its climate, and to-day Syracuse, the most opulent city of its time, lies in a desert, half covered by sands that were borne thither from Africa by the unobstructed sweep of the siroccos. Under the dominion of the Moors southern Spain was the garden and the granary of Europe. Under Spanish kings the luxuriant growth of timber that crowned the Sierras and mountain slopes fell before the strokes of the woodman's ax, and now half its territory is so sterile as to be unfit for cultivation, and its once genial climate has become fitful and rough, while portions of France that were sterile fifty years ago have been rendered productive and prosperous by the planting of trees.

"*The trees of the field is man's life*" said the old Hebrew lawgiver. We have recounted a few of its benefactions, of its contributions to every human want, and to every form of human industry, to the bubbling spring, the babbling brook, and the flowing river; of its incalculable worth to the beasts of the field and the fowls of the air; of the priceless influence of forests in mitigating the rigors of climate and in increasing the fertility of the soil. Let us see how in a larger sense the tree of the field is "man's life."

Above and about us is an aerial ocean from which every living thing must draw its "breath of life." The waves of this upper ocean in their onward sweep wash every pure and every impure thing. Into it are poured the sweet breath of the flowers and the noisome exhalations of everything unclean and repulsive. Hour by hour great factories and work-

shops are pouring into this ocean of air uncounted tons of carbonic and sulphurous acid. Unmeasured volumes of poisonous exhalations pollute it. The breath of countless myriads of animals taint it; and yet this encircling air is as pure and wholesome as when the stars sang their welcome to the new born earth. It is the business of leaves and growing plants to absorb these poisonous gases, to convert them into living tissue, and to pour back into this aerial ocean ceaseless streams of moist, pure air. Thus it is that this life giving air is "forever spent, renewed forever." Thus it is that the breath that keeps your lungs heaving and your pulses throbbing may have been distilled for you by the magnolias that grow along the Savannah or the giant trees that skirt the Amazon. It goes from you, robbed of its vital force, laden with carbonic acid and worn-out matter—a dead and worthless thing; but in an instant the winds will take it up on pinions, lighter and softer than eider down, and will bear it onward in a mission of mercy over the world. The roses and myrtles of Cashmere and the cinnamon trees of Ceylon will feed upon it, the lotus lilies of Nile and the far off cedars of Lebanon will laugh as it decks their foliage in deeper green. We have glanced at the blessings that trees confer. I would that you might learn to love them. Under heaven there are no better friends to man. We have still noble forests, and trees that would be priceless to the dwellers on the plain. I pray that you may cherish them; that you may learn to plant and care for others. Plant trees on your school grounds and by the wayside, on the hillsides and sterile places, and the song of birds, the murmur of leaves, the babble of brooks, the lowing of herds and the bleating of flocks shall honor and thank you.

TREE PLANTING.

How To Plant.

Select straight, thrifty, young trees from the nursery, or from open places in the forest. Saplings taken from deep woods are ill prepared to bear the strain of wind and storm. With a sharp knife thin the branches to about the same extent that the tree has been bereft of its roots. Do not cut off the leader. Each species has a form peculiar to itself, and if allowed to develop according to the law of its own life will present forms of unique loveliness; but you may mar and mangle a growing tree with your pruning knife until every line of beauty has disappeared, and the resultant monstrosity is an offense to the sight. In all your pruning, remember that the leaves of a tree are its lungs, and that the rapidity of its growth is limited by the extent of leaf surface it presents to the sunlight. Hardwood trees, such as oaks, elms and maples, should be set at least thirty feet apart—forty feet is better. It is the function of leaves to assimilate plant food—that is, to convert dead matter into living tissue. To this process sunlight is essential, and if the tree be shaded on any side it will grow one sided in the effort to bathe its leaves in light. The foliage may still please, but the outline will be distorted and ugly.

A symmetrical tree, rounded out into the full beauty of abounding life is a source of perpetual delight.

In transplanting trees secure as much of the tap root and its main branches as practicable, and in planting out let these roots retain about the same position that they had originally. These roots are to hold the tree firmly in position and to store nutriment for another year. Make the receptacle for the tree wide enough so that its roots need not be doubled back upon themselves. Do not plant a tree much deeper than it originally stood. If the ground be poor, partly fill the hole with rich loam from the forest, that the tree may be fed while its roots and rootlets are reaching out to find nutriment in the surrounding soil.

Pack the fine soil gently but firmly about the roots, and when these have been covered deeply enough to secure them from injury, pack the ground still more firmly by tramping. At first the tree must be fed by the food stored in its large roots and by water and soil in solution, absorbed by fresh surfaces, and imbibed by root-hairs. These have now but a feeble hold upon the ground, and if disturbed in their bed, the tree will die of starvation. Fill to the level of the surrounding surface and cover to the extent of two or three feet on each side of the tree, and to a depth of two inches with a mulching of wood chips, leaves, hay or straw. This mulching may be kept in place by stones, and these may be rendered more sightly by white-washing.

When a tree is taken from the ground the ends of broken roots should be cut off smooth, and all the roots should be covered with moist straw or a wet cloth. Never allow the roots to become dry before the tree is reset. The fine soft soil that is packed about the roots should be moist, but not drenched. A newly planted tree will need watering occasionally during the first and second summers if the season be dry. Indeed, the young tree is likely to be subjected to its severest trial during the second August.

WHERE TO PLANT.

Trees should not be planted so near the school house that their shadows will fall across its windows, or that their foliage will obstruct the free admission of air and sunlight. A row may be planted in the street, six or eight feet from the fence line, but these must be protected by guards and hitching posts. In very small lots the corners only may admit further planting. Even then the grounds may be made attractive by planting evergreens to divide the play grounds and to masquerade out-buildings. An adjoining marshy spot or unsightly place should be screened by trees. For such purposes red cedar and Norway spruce are desirable trees. Frequently the owners of adjoining lands will allow the roadsides leading to the schoolhouse to be planted with avenues of trees. Sometimes the school grounds are covered with native trees. From these select the noblest, most symmetrical ones, and from time to time cut away everything that would interfere with their complete development. Leave the sun and the wind free to kiss your favorites on both cheeks. If variety can be secured only by digging up trees and planting others in their places, the holes should be made wide and filled with fresh earth. A tree will rarely thrive if set in the place from which one has recently been taken, unless fresh soil is substituted for that which the old tree has exhausted.

WHEN TO PLANT.

It may be said, in general, that *the spring is the best time to transplant forest trees.* Deciduous trees—trees that drop their leaves in autumn—

may be transplanted at any time after the ground has settled and before the leaves appear. It is safest to set coniferous evergreens just after the buds have started.

WHAT TO PLANT.

Among the trees that are indigenous in Wisconsin, that are widely distributed over the state, that may be grown on a great variety of soils and that are most desirable for street and lawns, are oaks, elms, maples, lindens and hickories. Neither oaks nor hickories take kindly to transplanting, and it is generally easier to rear them from the seed than by resetting. The White or American Elm is the most majestic tree of our forest, and its leaves are the finest of all our native trees. Streets planted with elms on either side become columned and arched like the aisles of a Gothic temple. Like the maple it bears transplanting well. Its home is on rich moist soil, but it will thrive on dryer soils where the subsoil is strong and moist. On deep sand it will not make luxuriant growth, and when the season is dry it is wont to shed its leaves before midsummer is over. The red or slippery elm is not a desirable tree for street or lawn. Its top is so open that its shade is of little worth, and its general appearance is spectral. The maples are a noble family and may be cultivated everywhere in Wisconsin that a tree will grow. The hard or sugar maple is the best of its family. A rich, warm loam is its "native heath," but it will thrive on clayey or sandy soil. On dry sand with sandy subsoil the Norway maple, though an exotic, thrives better than any other of our hard-wood trees. It has broad, fresh leaves that preserve their bright green tint long after most of the leaves of the forest have fallen, or turned sear and brown. Red maples make beautiful trees if grown where they are protected from the brunt of storms. Lindens or basswoods are rapid growers, and their thick bright foliage contrasts pleasantly with the darker hues of the oak and the hickory. The white ash and black cherry are beautiful trees and may be successfully cultivated on any good ground. The white birch is a graceful tree, and looks well on an open lawn.

THE WORTH OF WISCONSIN FORESTS.

B. S. HOXIE,
EVANSVILLE, WIS.

Forty years ago Wisconsin possessed the most valuable pine forests of any state in the Union. These forests are being rapidly cut off, and the timber removed to supply the demands of commerce. This has brought millions of dollars to the lumbermen and given employment to thousands of men annually. But this will not always continue, for it is estimated that in less than fifteen years these forests of pine will be entirely gone over, and our material wealth in this direction counted as passed. Already some of our lumbering towns and cities feel the depressing effects of the loss of business as lumbering operations are now confined to the more extreme northern counties.

Beside the loss of our pine forests and their products our best varieties of hardwood are getting more scarce every year. So much is this true that we have no longer any practical amount of standing black walnut left fit for commercial purposes, for the manufacture of furniture, and the supply of white wood or poplar is confined to limited areas. The oaks are the most numerous of our state trees and in all respects perhaps the most valuable for fuel, railroad ties, wagon work, furniture, car building, and house finishing lumber.

DESTRUCTION BY FIRE.

This rapid narrowing of our timber area, the source of wealth, the accumulation of ages, would not of itself be alarming, if it were the only loss. The refuse of tree tops, dry leaves and underbrush invite the ravages of periodical fires, which burn all young growth, and in many instances the forest floor itself, licking up, as it were, all humus and vegetable mold, which should afford the soil for future tree growth or annual crops of grass or grain.

Besides the considerations mentioned as to the value of our forests, they are the home of our wild game and fur bearing animals, which are no small source of profit and recreation to the hunter and pleasure seeker.

We till the land for the money value there is in the annual crops produced. I could show that there is a money making value in the forest crop, and the annual increase may be represented as money at compound interest. A small tree, one or two years old, is only fit for a walking stick, but the layer on layer of wood every year for fifteen or twenty years, increases the bulk of timber in compound converse proportion.

We should then protect our forests, and by all available means promote the growth of the different varieties of useful trees for home use, and for commercial purposes. You and I may not live long enough to see the value of commercial forests planted by our own hands on now sterile lands, but future generations will bless us for planting them. Who shall estimate the value to the home and the landscape by reason of beautiful trees?

THE DISTRIBUTION OF TREES IN WISCONSIN.

L. S. CHENEY,
MADISON, WIS.

When Dame Nature distributed her forests, she gave to Wisconsin a goodly portion. Something she gave to every part, while upon the state as a whole she bestowed a variety of wealth and beauty unsurpassed anywhere. If we consider small woody vines and running plants, no less than two hundred kinds of trees and shrubs are found within our borders. These include the little creeping snowberry that nestles about old moss-covered logs lying in the swamps of the north, the fragrant arbutus, clothing the sandy barren with a mantle of green whose border is fringed with delicate tints of white and pink. The rose, the acknowledged queen of the wild flowers, the hawthorn which brings to us in early spring its burden of fragrance and snowy blossoms, the maple with its thick canopy of emerald, inviting us to a cool and shady retreat beneath its ample crown, the elm with its feathery stem and gracefully swaying festoons of verdure, the oak with its gnarled and knotted branches, the symbol of rugged strength, and, as a fitting climax, the graceful, regal pine, the monarch of our forests.

Not all of our forest trees and shrubs are equally distributed throughout all portions of the state, nor do our present forest areas correspond to those found in the same territory three-quarters of a century ago. Let us go back to the time when the red man held undisputed sway from Lake Michigan to the great "Father of Waters." If we journey from the point on the former where Racine is now situated northwest to the present location of Juneau, thence northward to where the Fox river falls into Lake Winnebago, and from there to the St. Croix falls, we shall have to the west and south of our line of travel a prairie region, broken by the heavily timbered areas of the Chippewa, Black and Wisconsin rivers, by that occupying what is now Richland and adjoining counties, and smaller areas of stunted timber growth throughout the region. North and east of this line the country is well wooded. Over all that portion lying between the Fox river valley and Lake Michigan, and a strip about fifteen miles in width, skirting Green Bay on the west, deciduous hardwood trees predominate, while the cone-bearing sorts are the most numerous to the north and west.

Let us now go on a tour of inspection of Wisconsin timberlands as they are at present. Our attention is attracted at the outset to the fact that there are no longer any extensive tracts of prairie in the state. What has become of the one-third of our territory that was once an almost treeless expanse? When the region became settled and the ravages of annual prairie fires were stopped, the natural seeding from the few trees present, and the fertility of the soil sufficed to produce, in a very short time, the woodlands

as we find them now. How has it fared, in these years, with the pines? Not so well. The coming of the white man was not, to them, an earnest of good. Before his ax they have receded from the shore of Lake Michigan and the banks of all the larger streams until, from one-half the land once clothed in perennial green, they have completely disappeared.

It would be interesting and instructive to examine closely the habits and peculiarities of each of our trees and shrubs—they have characteristics just as boys and girls have, which mark unmistakably their personality—but we must content ourselves for the present, with a little about a few of those with which we are most concerned. First in importance, to Wisconsin, is the white pine. This is our noblest tree. When growing in the forest it frequently reaches two hundred feet in height. It has a single shaft, straight as an arrow, tapering gently, from the ground up. From sixty to one hundred feet of the trunk is entirely free from branches; above, they appear in whorls growing out at right angles to the stem. When growing in open places the early branches do not die and fall away. The trunk not infrequently divides into two or three main ascending stems, each giving off branches, as in the case of the single stem. Under such conditions, the tree has a thicker, rounder top, and does not attain the height which it reaches in the forest. The bark of the branches and upper part of the trunk is smooth and soft, often having a polished surface. With age the bark becomes fissured; but between the fissures the surface remains smooth. This tree may always be recognized by the number of leaves in each of its clusters. There are five. In related species there are but two or three. The cones are long, slender and smooth.

When our state was settled, there was merchantable pine on fully two-thirds of its area. A line drawn from Milwaukee northwest to Grand Rapids thence south to Mauston, and from there to Hudson, would mark the southern limit of this area. South of this line there were many small tracts which furnished pine lumber, and over a large portion of it there were scattering trees too small for anything but ornament. At the present time the territory bearing pine good for commercial purposes is perhaps less than half the original area. From the southern limit of this area, from the shore of Lake Michigan, and from all the large streams the pine has retreated before the attacks of the lumbermen.

The red, or, so-called Norway pine, is found on the more rocky or sandy portions of the pine region, having about the same general limits as the white pine. The characteristics of this tree are its tall trunk, usually very straight, small top, reddish, flaky bark, short, rough cones, and very long leaves, two in a cluster. Generally speaking, this is a less desirable tree than the former. Of the hemlock it can only be said here, that it is quite generally distributed throughout the pine region and is coming into use as a substitute for pine for many purposes.

The oaks are fairly well distributed over the southern three-fourths of the state. If a line be drawn from Shawano to the southeast corner of Sawyer county, and from there directly west to the boundary of the state, the oak tract will lie to the south. North of this the country is almost without a representative from this group. The oaks may be readily distinguished from other trees by their fruit, the acorn. There is, on the contrary, no very easy way of distinguishing one species from another. The white oaks, as a group, may be known from the black oaks, by the leaves, the former having rounded lobes, and those of the latter having pointed ones. Our most valuable species are the white, the red, the swamp white, the black and the

bur oak. Of these, the first two are found in all the rich woodlands of the oak area. They are perhaps best developed in the central portion of the state. The swamp white oak takes the place of the ordinary white oak in low, wet woods. The black oak is the prevailing oak over the original prairie regions of the state and is rarely found elsewhere, except on small areas of barrens. The bur oak, with us, is not usually a large tree, and does not do well except within very narrow limits. In three or four counties in the southeastern part of the state, there are fine groves of this majestic tree.

The elm is found in all parts of the state, but it is confined almost entirely to the low lands, especially those bordering lakes or streams, where it constitutes a considerable portion of the forests. Commercially this tree is of comparatively little value in Wisconsin, although it is used elsewhere extensively in the manufacture of furniture and for making packing barrels. As an ornamental tree, however, the elm is one of our best. In full foliage it is, without doubt, the most beautiful of our trees. It varies considerably in style of growth. We see it now with its trunk soon dividing into several principal ascending branches, these dividing again and spreading, until the whole assumes the form of the tall Etruscan vase. Again, we meet one having a single shaft, bearing at the top a few large, horizontally spreading branches, usually terminated by smaller, pendent ones. Where the tree has been allowed to grow in an open place it often takes the form of the round-topped oak.

Our trimmest, most symmetrical tree is the hard or sugar maple. Spreading somewhat generally it is found in all the rich hardwood forests of Wisconsin. Within the forests themselves, it is inclined to be local in its distribution. The typical maple has a short trunk surmounted by a broadly oval, or spherical crown. When growing in the forest it may become less symmetrical, with a top less dense. It may be of interest to say that the Norway maple is being successfully grown in a few places in southern Wisconsin. This tree has the habit and foliage of the sugar maple, but retains its leaves longer in the autumn and is a hardier tree. We have many other trees that are worthy of attention. The ash, the birch, the walnut, the hickory, the linden, or basswood, the beech, the spruce, the larch, the cottonwood, the willows, and a score of others, all play an important part in our welfare. In short every tree or shrub about us has something to do with our happiness.

Summer or winter, day or night,
 The woods are an ever new delight;
 They give us peace, and they make us strong,
 Such wonderful balms to them belong.

—STODDARD.

FAVORITE WISCONSIN TREES.

THE OAK.

PRESIDENT ALBERT SALISBURY,

Doubtless, no tree is so widely distributed throughout Wisconsin as the oak. In scarcely any part of the state, where there are any trees at all, can one walk a mile without coming upon at least one species of oak. It is well known to every farmer, to every woodsman, and to every other person who knows one tree from another. And with those who are most shamefully ignorant of trees, the oak is the one tree which they are safely able to identify. This general familiarity with the oak is due not alone to its wide distribution, but also to its well marked characteristics. It grows to a good size; thrives, in some of its species, on almost any soil; and seldom succumbs to any sort of enemy or abuse. The oak is no stranger, no coy exotic, no dainty dandy of a tree; but an honest, sturdy tiller of the ground, drawing its food from the depths of the earth and returning abundant products for the enrichment of the upper soil. Few trees, if any, have wider utilities than the oak. More than half the firesides in Wisconsin brighten with the glow of its coals. The wagon-maker, the cooper, the ship-builder, find their fortunes in the oak; and what beauty the cabinet-maker is now tardily revealing in the red oak, the least aristocratic, while yet alive, of the oak sisterhood!

The oak has not only strength but beauty, the beauty of color. What can be more lovely than the downy pink of the opening oak-buds and tiny leaves in spring. There are no words to fitly express the delicate harmonies of the oak woods at this stage. Later, comes the rich glossy green of midsummer; and, again, the glow of autumn, the rich crimson bronzes of the black oaks and the glowing purple of the white oaks. The maples are more brilliant; but the richness and depth of the autumn woods are mainly due to the oaks.

The distinguishing features of the oak are not found in the form of its leaves, as many suppose. Although the leaves of our northern species are all large and deeply lobed those of the southern states present widely different forms. Some are evergreens, as the famous live oak; some have small narrow leaves with entire margins, as the willow oak; some have leaves with wavy outlines, as the beautiful chestnut oak; while one species, the laurel oak, has leaves resembling those of our wild cherry tree.

The sure and easily recognized sign of the oak is its fruit, a smooth nut, set in a scaly cupule. There is no mistaking an acorn, or oak-corn. Some species of these are edible, as that of the chinkapin oak; and nearly all are food for the lower animals.

But the character of the oak is best shown in the manner of its growth, its broad angles and rugged, massive strength.

Says the "Autocrat of the Breakfast Table,"—"There is a mother-idea in each particular kind of tree, which, if well marked, is probably embodied in the poetry of every language. Take the oak for instance, and we find it always standing as a type of strength and endurance. I wonder if you ever thought of the single mark of supremacy which distinguishes this tree from those around it? The others shirk the work of resisting gravity; the oak defies it. It chooses the horizontal direction for its limbs so that their whole weight may tell, and then stretches them out fifty or sixty feet, so that the strain may be mighty enough to be worth resisting. You will find, that in passing from the extreme downward droop of the branches of the weeping-willow in the extreme upward inclination of those of the poplar, they sweep nearly half a circle. At 90° the oak stops short; to slant upward another degree would mark infirmity of purpose; to bend downwards, weakness of organization."

This characteristic is even better shown in winter than when the trees are in full leaf. What lover of trees has not lingered on a pleasant winter's day, or evening, to study and admire the outlines, traced against the sky, of a group of venerable bur oaks. Their summer aspect, too, is strong and dignified; and on a summer's night,

"Those green-robed senators of mighty woods,
Tall oaks, branch-charmed by the earnest stars,
Dream, and so dream all night without a stir."

No tree holds a higher place in literature. Poets no less than prose practical men, love the oak. The cedar, the palm, and the pine are the only rivals in their affections. And this is not alone for its utility and beauty, but for its symbolic character. "Hearts of oak" is an epithet that needs no interpreting. The Romans gave a crown of oak-leaves to him who had saved the life of a citizen.

What better choice then, than to make the oak the state tree of this vigorous young commonwealth and sing with Chorley,—

"A song to the oak, the brave old oak,
Who hath ruled in the greenwood long:
Here's health and renown to his broad green crown,
And his fifty arms so strong."

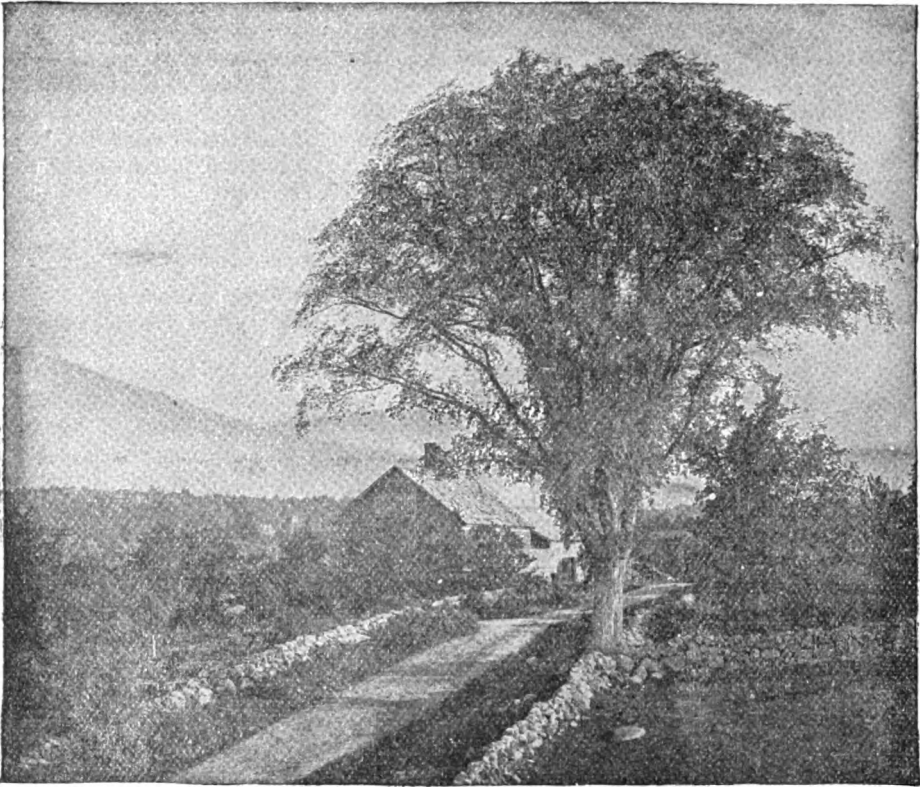
THE AMERICAN WHITE ELM.

W. D. BOYNTON,

Our favorite trees are something like our human friends: they draw our admiration and love; our hearts go out to them intuitively. We know that we like them, and yet we cannot easily give the reason therefor. Yet it is possible to some extent to analyze these thoughts and feelings—to catalogue the good qualities of a friend, or to state why we are fond of a particular tree. Do we not sometimes in our thoughts clothe trees with human attributes? Do we not find all types among them? Do we not find the forward and ambitious; the stately and awe-inspiring; the brave and sturdy; the beautiful and graceful; the modest and lowly?

Our great men possess all the nobler human attributes in a large degree, and it is this which enables them to meet all human exigencies successfully; so too, I should say that our greatest trees should possess many if not all, of the qualities above enumerated. On this ground I raise the banner of the elm.

Alphonso Wood, the famous American botanist, says of this great American tree: "A majestic tree, usually distinguished by its long pendulous branches. The trunk attains a diameter of from three to five feet, losing itself at the top in two or more primary branches. These ascend, gradually spreading, and repeatedly dividing in broad graceful curves, and affording a good example of the solvent axis. It is a great favorite as a shade tree, and is frequently seen rearing its stately form, and casting its deep shade over the "sweet homes" of New England."



Reduced from Illustration in
GARDEN AND FOREST.

[Copyright, 1890, by the
Garden and Forest Pub. Co.

And not only is it a great favorite in New England, but also in almost every corner of our broad country. Few trees have so wide a habitat, and thrive under such varied conditions as the elm. It exists naturally at least three hundred miles farther north than the oak.

It is very hardy and of rapid growth. It thrives alike on high, well drained lands, and on low undrained lands.

The root formation is such that it can be readily and safely removed from

its natural position in the forest to any desired location. Unlike the oak and hickory, it has no so called spur root, running straight down into the subsoil, which always renders the work of removal difficult and usually unsuccessful.

In growing, the elm has a happy faculty of adjusting itself to the room or space available. It will stand a little crowding, and, if trained to that end, will take on a close, compact head in its limited space. When given plenty of room and its own free way, it makes a most magnificent growth with its long, sweeping, pendulous branches. Then indeed it is sturdy, stately, beautiful and graceful.

It has a beautiful way of reaching its great arms down over us, as though it would be with us, rather than of trying to rear its head away up into the clouds above us. It seems to dislike to get away from old Mother Earth, and its human friends.

Finally, is there another tree that figures so prominently and continuously in the history of our country, and in the verse and lines of our great poets and authors? Whittier, Lowell, Bryant, Longfellow, and Thoreau all sound the praises of the noble elm which sheltered them in childhood, and under whose arms they now sleep the last, long sleep.

The foliage of other trees may take on more vivid autumnal hues, but what can be more beautiful among all these bright colors than the delicate soft yellow of the elm, which is so well portrayed by Thoreau:

"I see the emerald woods prepare
To shed their vestiture once more,
And distant elm trees spot the air
With yellow pictures softly o'er."

THE WHITE PINE.

L. C. CHENEY,

The tree for Wisconsin is the white pine. It is our most widely distributed tree. To every school-boy and school-girl it is familiar. No other means so much to us. No other touches so many of us. The principal element in our pine forests, it is one of the great sources of our material prosperity. Under its wide-spreading branches many of us were born and reared. With it, in the depths of wintry forests or upon the bosom of lake or turbulent river, our fathers or brothers have spent long weary months. No wanderer from another land liable to fall before the rigors of our climate is it but a native, born to our cold and rocks. Accustomed to delving in a reluctant soil for its hard-earned sustenance, this nobleman of the forest will thrive in every nook and corner of our state.

When once we know this tree we shall always recognize it. Like the tried and true friend, it is ever the same; and, unlike the traveller in the fable, neither scorching sun nor the chilling blast can force from it its beautiful coat of green. The giant shaft of arrowy straightness, the long slender cone, and the smooth polished bark of the ample branches and upper trunk are marks which assist us in distinguishing it. There is one mark which never fails and one by which even the little prattler from the kindergarten

may recognize this friend. Look at those slender, needle-like leaves. There they are in little groups. Look a little closer. "Just five in each group," you say. That is right, and by this mark you may know this splendid tree.

The history of the development of ship-building in Europe and America is a story about the pine tree. Read of the galleys of the ancient Mediterranean Sea, filled with warring Romans or trading Phoenicians, and think of the pines of Mt. Ida or of Thessalia. Go over again the stories of the Norse Sea Kings, traversing the stormy German Ocean in their rude boats, and recall the pines of Scandinavia. Poets have sung of the colossal grandeur of this giant. Well they may. You may see it standing on the brink of a precipice hundreds of feet sheer up, stretching its mighty shaft heavenward two hundred more. There it stands, reaching above and beyond all others about it, like a silent sentinel guarding the hidden treasures of the virgin forest. What more fitting symbol could we choose for our loved state than this noble tree? As it is of sturdy growth so are the people of our state a sturdy, independent people. As it grows up and up, far above its fellows, so should we hope to excel in whatever tends to elevate the human race.

THE HARD MAPLE.

C. A. HUTCHINS.

The maples are a noble family, citizens of many nations, denizens of many climes; always and everywhere clothed with more than queenly grace and beauty. Fifty members maintain the stainless purity of the family name and uphold its pristine glory. Ten of them are our fellow citizens and hold honored places in each one of our great sisterhood of states. Long ago the birds chose the maple as queen of the forest. On its pliant branches they sing their sweetest songs. Amid its silvery leaves they tell the story of their loves and seal their plighted faith. Lady bird makes her secret bower amidst its branches, and the queenly maple draws her green curtains so closely about the nestlings that the sharp-eyed squirrel cannot find them.

The saying of an old English divine "that cleanliness is next to godliness" has passed into a proverb, but the maple is the cleanest tree in the forest. Noxious worms do not infest it, and during the long summer it will but rarely litter the lawn at its feet with leaf or twig. Our cousins across the water talk much of the "heart of oak," but you will find a dozen oaks that are hollow hearted where you will find one maple that is not sound to the core. And the maple, like every boy that is sound of heart, is clean of life. The compact, oval top of the sugar maple is seldom torn by the storm, or broken by the weight of sleet and snow that so often destroys trees that have horizontal or long, pendulous branches. No scars mar the beauty of its arrowy stem. No decayed spots afford shelter for vermin or homes for the bandits that invade the leafy arbors where the feathered singers meet to hold their jubilees of song. The birds could tell you this, but you would babble to the thieving squirrel, and he, like a robber baron of the Rhine, would issue from his castle—a hole in a hollow tree—to invade their sylvan retreats. So the birds tell their secret only to the whispering leaves, and these in turn only to the close-mouthed fairies.

Some boy asks, shall we choose the maple as our state tree because the birds choose it for their nesting and for their choral hall? That boy is a drowsy fellow and has no soul for the matins and vespers with which the jubilee singers of the woods greet the coming and the parting day. Yes, vote for the maple because the birds prefer it and for the same reasons. Rear these leafy temples near your homes and play-grounds, and the agile motions, glittering plumage and melodious songs of birds will charm both eye and ear. Birds love the maple because it is clean, and because its dense foliage lets scarcely a fleck of sunlight shimmer through its fluttering leaves to reveal their secret bowers. You plant a tree for beauty and for shade. No tree of our forests excels the maple in arrowy straightness of stem, symmetry of outline or in delightful coolness of shadow.

Let us recount the excellencies that commend the maple to your choice. It is widely distributed and will grow on any soil that will furnish food for man. It will thrive on soils that afford only a sickly life for the oak, the elm or the basswood. It has wide spreading roots and so bears transplanting well. It does not soil or starve the lawn that may find luxuriant growth from the trunk outward. It has fine, clean, strong wood that is so free from gums that it will take any stain or bear any polish. From its sap we get sugar that is flavored by Olympian nectar. The sugar maple holds its branches well up to the leader, so that its compact, sinewy top is seldom torn by sleet or storm, and it will preserve the faultless symmetry of its form without the aid of the pruning knife. In open places half the annual growth of the elm or red maple must be cut away or the tree will be distorted and ugly. The leaf of the maple is by no means so fine as that of the rock elm, but no tree of our forests has a more delightful foliage or affords a denser shade than the sugar maple. The tints of its leaves are charming; pink in the opening bud, the coolest of greens in summer, and under the rude kisses of the autumn frost blushing up in every tint of the fading day.

Jes' so our spring gits everythin' in tune
 An' gives one leap from April into June:
 Then all comes crowdin' in; afore you think,
 Young oak-leaves mist the side-hill woods with pink;
 The catbird in the laylock-bush is loud;
 The orchards turn to heaps o' rosy clouds;
 Red-cedars blossom tu, though few folks know it,
 An' look all dipt in sunshine like a poet.

—LOWELL—*From the Biglow Papers*

SHALL WE WALK TOGETHER.

C. H. SYLVESTER.

INSPECTOR OF HIGH SCHOOLS.

The air is redolent with the odors of coming spring. The sun is warm upon the hillsides even if from the fence corners and the north side ravines the ice and snow have not wholly gone. We have been indoors too long already if we would come at the very beginning of things. It is just the time of all to see and to feel the great awakening. The walls of the schoolroom are dim and noisy yet with the confined echoes of the winter, and if the books are piled away and tasks for one day are forgotten we may perhaps feel more keenly that it is not all of education to thumb the dogs-eared leaves of our depressing texts nor to feebly discuss the facts they disclose.

Climb the hill, rocky and steep. Be careful how you depend upon those loose stones which the untiring frost has heaved to the surface just now. Do not step too carelessly on that pile of dead leaves for underneath it the slippery ice has remained blanketed beyond its time, and on its surface are perfect intaglios of the leaves that have lain next it.

Not many flowers will we find, and yet there is a sheltered spot here on the side of this ravine where the golden eye of a buttercup will win us with its glance. The flower is so close to the ground that you can scarcely get your fingers to the stem. Later it will grow taller but now it hugs the earth to catch the greatest quantity of radiating warmth. The under surfaces of its sepals and its leaves wear the same gray, furry coat we saw a few moments ago on the buds of those pasque flowers. When nature sends her pet nurslings out into this nipping climate she clothes them well and gives them instinctive power of self-preservation.

Surely you wouldn't for the world miss seeing the gray moss that covers the side of yonder stump. Go closer. I thought so. You have found those scarlet-tipped knobs that are always so attractive. They excite the feelings like a bit of genuine humor, they are so unexpected, their relations to their surroundings so incongruous. Yes, if you remove a section of the bark with them they will remain bright in the school room window for days to come. But that marvelous crimson cup, large and delicate as a wine-glass, which you have just found covered by damp, mouldy leaves and clinging by its rusty stem to the rotten limb, will wither and decay in the light of day. How could such brilliant coloring be drawn from the black muck surrounding it? You will be sorry if you crush the pretty fungus for, like many another and more complicated organism, its beauty is only skin-deep.

What is the matter? Frightened? Now don't be alarmed. That bit of writhing life has come out for its first glimpse of spring and in its soul—I believe it has one—is the same stir of joyous life that makes your own eyes sparkle. You can't do better than to stop and see how he moves along in the world. The scales on the lower surface of his body are slowly

raised, brought forward and sunk into the inequalities of the ground and then, by strong muscular contraction, the whole body is drawn briskly forward. Try to hold him back. Now, not content with the force of the scales, see him bend his body across the face of the big stone and around that heavy weed. Fastened at these points note how rigid the lithe body becomes and what force so greatly disproportionate to his size he exerts to free himself. The perfection of grace is characteristic of his every movement, regardless of the embarrassments under which he may labor. The sparkling, wicked eyes; the forked tongue, black at the slender tips but blood red at the base; the flattened head protected by the bronze plates; the slender palpitating body covered with glittering, keeled scales, all will repay the most careful examination. But we will drop the terror-stricken animal and pass on, for once forgetting that our heel was ordained to bruise the head of so much elegance. By the way, has not that one sentence been the cause of worlds of suffering to the most inoffensive of creatures?

But we must hasten for I would not have you fail to stop at the beautiful village over the hill. You didn't know there was a village there? You thought that was all wild woods? Why, there is a large town with hundreds of inhabitants and each individual owns his own home, has built it with his own hands, moves it about as he likes and adds to it as his necessities require. Some have brown stone fronts, some live in quartz palaces and some are happy in houses of wood, hay and stubble. All live in a different atmosphere from this we breathe but all are lively and happy. And now we are there and if you will look into the pellucid depths of this little spring you will see my colony working along in their curious cylindrical dwellings. Each property owner sits with his black head and six legs thrust out of his house and watches patiently for food and society. No, he has not always lived alone in a house of his own in this unsocial manner. He came from a little egg a delicate gauze-winged insect deposited as one of a cluster on the grass by the brookside and when he first broke forth into the light of day he gravitated as naturally as could be into this charming spring and began to fasten together with the firm water-cement he secreted for himself the ragged bits that make his residence. Your guess is right. He will not always be contented with his lot. Like ourselves, he will grow discontented with his life, withdraw from sight, place before his door a silken lattice and cease to interest himself in the politics of the spring. The caucus held on the lee side of the big stones will know him no more and he will cease to advocate schemes to protect his fellows from the hideous monster known as fish. As usual such unnatural retirement changes his nature and with that his form changes. Unnecessary members are lost and he sinks into a torpor more trying to his nerves than his previous active existence. One day he awakens from his lethargy, bursts the case of his old habits, rises to the surface of the water and sails away, a dainty caddis-fly. Some of his relatives bring their dwellings to the surface and use them as boats while they disrobe themselves, dry their wings and stretch their limbs preparatory to that last flight. Fragile as a thread of glass, the new life soon terminates, for when eggs are laid the strange cycle is ended and there is no further duty for the ephemeral being whose life history we have told.

What have you found while I have been talking so freely? O, I see. I have taken others from this same spring many seasons in succession. The water cuts out the soft tissue and leaves perfect skeletons of the leaves. They are wonderfully delicate and pretty. I should think you would preserve them. You can lay them between the leaves of your botany and they

will be capital for illustrations in your future study of venation. Yes, I suppose they may be found in any brook, but this one is so clean and undisturbed that the leaves are spotless while usually they will be slimy and dirty from the winter's immersion.

The plants are beginning to grow down there in the warm depths. The shining leaves of the water-cress are intermingled with those of the water-pennywort and you have doubtless been many times disappointed with the bitter taste of the latter when you thought it was cress you had found. This very cress, though, becomes a nuisance in a brook and I should be guarded about introducing it where it has not already made its appearance.

You will probably find nothing attractive in that dull green and purple pointed hood that has thrust itself up in the bog here at my feet. Particularly will you be disappointed if you recognize it as containing the flowers from the root whose great, green leaves you know as the skunk-cabbage. Now, really, I have a little respect for a plant which can evolve so unpleasant an odor to protect itself from admiring cattle. And it is a vigorous thing, a strong-growing, showy mass of green that always seizes the eyes when it rises from the stubble of a marsh.

How the time has flown since we started out upon this jaunt. The sun is low in the west and the chill air strikes into one's veins as soon as the shadows fall upon him. We have had enough of open air life for one day and now we must hasten back carrying our garnered treasures. We have material to occupy us during the rainy days we know are coming. They are usually dismal days for we have had our taste of freedom, our senses have been charmed with the new life of the year and it is worse than punishment to be again confined by the four walls of our school. But it need not be. All we are bringing in with us will call for careful thought and from that study will rise questions which the books will answer and they in turn, backed by the inspiration of nature, will take the chill displeasure from the rattling of the windows and the clattering rain upon the roofs. We will read of the woods and the fields, of the birds and the flowers, and draw in from these living bits of prose and poetry the inspiration the tardy season denies us.

Woodnotes.

* * * * *

And such I knew, a forest seer,
A minstrel of the natural year,
Foreteller of the vernal ides,
Wise harbinger of spheres and tides;
A lover true, who knew by heart
Each joy the mountain dales impart;
It seemed that Nature could not raise
A plant in any secret place,
In quaking bog, on snowy hill,
Beneath the grass that shades the rill,
Under the snow, between the rocks,
In damp fields known to bird and fox,
But he would come in the very hour
It opened in its virgin bower,

As if a sunbeam showed the place,
And tell its long-descended race.
It seemed as if the breezes brought him;
It seemed as if the sparrows taught him;
As if by secret sight he knew
Where, in far fields, the orchis grew.
Many haps fall in the field
Seldom seen by wishful eyes;
But all her shows did Nature yield
To please and win this pilgrim wise.
He saw the partridge drum in the woods;
He heard the woodcock's evening hymn;
He found the tawny thrush's broods
And the shy hawk did wait for him;
What others did at distance hear,
And guessed within the thicket's gloom,
Was shown to this philosopher,
And at his bidding seemed to come.

—EMERSON

HOW TO BEAUTIFY THE SCHOOL GROUNDS.

PROFESSOR E. S. GOFF,
MADISON, WIS.

More than eighteen thousand trees were planted by the school children of Wisconsin on last Arbor Day! Think of the number of boys and girls who will enjoy their sports beneath these trees as they grow up, of the weary way-farers that will gain true refreshment from their grateful shade and of the thousands of people of all ages that will delight in their beauty. But this suggests another thought. Something besides trees is needed to give the school grounds their highest beauty. It is proper that we should begin with trees, because these require more time for development than other plants, but now that very many of our schools have made a fine beginning in tree planting, it is time that some improvements be commenced upon the lawn. A fine, smooth turf upon the part of the ground not needed for sports, with a flower bed or two in sheltered places, will add very much to the beauty of the school premises and will give much quicker returns for the labor expended than will the trees.

If the soil of the school ground is naturally poor and dry, a liberal dressing of fine manure will be needed before it can support a fine, luxuriant turf. In most cases manuring is desirable.

Where swamp muck can be readily secured, this may be used in connection with the manure with great advantage. If the surface of the ground is already uniform, the manure and muck may be applied as a top dressing, and so leveled with the rake as to fill in the small depressions; but if any considerable irregularities of surface exist it will be necessary to break up the sod and, after properly leveling the surface, to seed the ground anew.

In case it is necessary to break up the ground for reseeding, it will be well to manure and plow it in August or early in September in order that the sod may have time to partly decay before the final leveling and seeding. The ground should then be harrowed occasionally until late in autumn, to keep down weeds and level the surface. Just before freezing weather, it should receive the final leveling, when the surface should be made as fine and smooth as an onion bed. Then, after a light fall of snow in the following March, sow a mixture of seeds composed of equal parts, *by weight*, of Kentucky blue grass, red-top and white clover, using a peck of the mixture to each one hundred square feet. The melting snow will deposit the seed evenly over the soil and the early spring rains will cause it to germinate before the dry weather comes. Some weeds will of course spring up with the grasses, but the lawn mower will readily reduce these to subjection, and by the end of the season, unless the weather should prove extremely dry, a fine turf will have been formed.

The location of the flower beds should be governed somewhat by the grounds. No flowers will grow well in entire shade, nor very near trees.

They may be planted near the schoolhouse, but not so near that the rain dripping from the roof will injure the beds by washing out the soil. The beds should be long and narrow rather than square, that they may be more easily cared for. Something will be needed to enclose them, or the edges will be worn away by the rains and the care. The stones that have been used for playhouses may be placed close together, side by side, making a bed about four feet long and two feet wide for each kind of flower seed to be sown. Or very pretty beds may be made by simply cutting out the sod just the size wanted for the bed. Either is prettier than beds formed with boards and is durable. Sod is not good for the sides because the grass will soon encroach upon the plants. If stones are used the sod must be carefully cut out. The beds must be filled with good mellow soil. If the schoolhouse is near the woods the older boys can borrow a wheel-barrow and spade and wheel three or four loads of leaf mold to fill them. Sod may be cut out near the roadside and the soil taken from there. It will not be quite as good as the leaf mold and will require a little more work to prepare it for the seeds, because it will have to be fine and perfectly free from lumps.

The following flowers are suitable because they are easy of cultivation, and they will give better returns for the labor and care than many others:—Pansies, verbenas, asters (dwarf varieties), nasturtiums (dwarf varieties), mignonette and sweet peas. One mixed package of each kind, will afford all the plants needed.

The beds should be made smooth and level. It is better to sow the pansy seeds in the bed on the east side of the schoolhouse. Pansies like light but not too much sun; the seeds must be very lightly covered and never allowed to get dry after sowing, because the tiny germ is so delicate that it will die if the soil gets dry.

The flowers will be finer if the plants are set six or eight inches apart; if they come up too thickly, they may be easily transplanted. The soil should be kept well stirred and free from weeds, and probably before the spring term closes, the little buds that look like poke-bonnets will appear and the queer little faces will look up as though thanking the sower for giving them a chance to grow.

The sweet peas will come up sooner if soaked in a dish of water for a few hours before sowing. Plant them about six inches deep, one row on each side of the bed. A support will be needed for the plants and it can be made as soon as they come up, and when they put out their little tendrils (their hands) there will be something for them to cling to. Get four sticks about one inch square and about four feet long; drive one down, about four inches, in each corner of the bed; get a stout piece of cord and tie to the tops of the sticks lengthways, then drive down small sticks, five or six inches in length, near the plants, tying twine on the top of the sticks and to the stout cord. This will make a cheap support for the vines and is something you can make yourselves.

Nasturtium seeds ought to be sowed about one inch deep. They will do well on poor, rocky soil. The other seeds must be sowed and cared for much the same as the pansies, except that they must be sowed a little deeper.

There may not be many flowers before the spring term closes, but if the plants are taken good care of they will grow large and fine and will give a great many flowers during the fall term. The pansies will blossom until the ground freezes and, if cut back in the spring, will give flowers all through the spring term.

A bed on the north side of the schoolhouse or under the shade of some tree,

planted out with hardy ferns, from the woodlands, would help to make the collection complete.

' It will be well to appoint a committee of older scholars to take care of the flower beds during the long summer vacation.

' If there are large trees growing in the grounds, it will be well to plant a few vines of the Virginia creeper about them. These will soon climb far up among the spreading branches, adorning them with bright green leaves all through the summer and glorifying them as autumn approaches with brilliant festoons of richest scarlet.

THE TEACHER SOLILOQUIZES.

C. H. SYLVESTER.

It is lonely after the scholars have gone. I may be impatient during the day and a hundred times a feeling of dissatisfaction with my lot may cross my mind, but when the day's labor is over and I sit here alone I miss the stir and the hum, the eager expressions of abundant vitality. The slanting rays of the sun fall upon my desk, lighting up the corners and showing the scars that have been given it in days gone by. It is not attractive, this room of mine, and what we have done to improve it, at the best is suggestive only of new cloth in an old garment, new wine in an old bottle. Yet I dropped into the habit of sitting here every night after school is done. Things are so fresh in my recollection. The problems seem so imperative and I get help from the very atmosphere of the room. Just now a new difficulty presents itself and I feel helpless before it. It began from a scrap of paper.

" This so-called, science teaching' in the grades and the district schools is subjected to grave criticism, as much on the part of its friends as by those who profess themselves opposed to such a scheme. It is claimed that no really results are obtained; that it must all in the very nature of things be intensely unscientific until trained teachers administer the doctrine. Nature lessons are said to be farcical and to accomplish the reverse of the end sought; that only distaste and disgust will come from the handling of such subjects by an ignorant but enthusiastic teacher.

'Some of the criticisms, perhaps, emanate from people who have no clear idea of what is expected to be accomplished, and more from those who desire only cold, accurate science. What that is valuable can be gained now when the reign of the text-book is over? Let us see. Pupils must learn to love nature. Must? Yes, *must*, if they would get from life all that it has for them. They must never learn to love except by association and contact with nature. No set and formal lessons will accomplish the result. No one ever learns to respect, admire and love another until he is brought face to face with the individual. He may have his interest excited in a person, but it requires the magic touch of the hand to transform that feeling into friendship. No scientific analysis of attraction is necessary—feeling goes deeper than science. What shall be done? Learn less about nature and learn more of nature. Give up the ideas of nomenclature and of classification except as they are incidental, and learn to see and enjoy. It takes more than one generation to make a scientist. Now this is not written for our teachers of science in high schools, normals or colleges. They are or should be able to teach science scientifically. It is for the teachers in the grades or district schools, the untrained ones or the overtrained ones, as the case may be. They may never have seen a text on one of the great natural sciences if we

except physiology, or they may have gone through a whole course in books. At any rate they are old enough to feel that they are suffering from lack of what they see their neighbors enjoying, the world about them, the birds, the trees, the flowers. Teachers would give the little ones that crowd about them something more than they possess; would show them the way to the vivifying waters of the fountains of youth. They know that they can now move and carry with them the little ones, but that every year of school life makes their pupils less responsive and less enthusiastic. Shall they close their eyes to the dim * * * * * or struggle * * * "

That is what is disturbing me. I found that fragment on a torn paper one of the pupils brought to school and it has roused the inquiries it proposes, but has furnished me with no solution of the problem. I am under-trained and I know not what to do. O, for an inspiration!

It was thoughtful of Joey to bring in that great bunch of flowers. Poor boy! life has little that is pleasant for him. His home is so dreary with his drunken father and careless, slatternly mother. Where he got those great, honest eyes and affectionate disposition I can't conceive. Under that big mop of hair which he tries so faithfully to subdue is a clear mind and a strong nature. What is before him? He said when he brought the flowers in, "There ain't many kinds out yit but there's an awful lot of these." Not many kinds; no, that is so. There's a "Jack." He called it that. Said "Jack" would preach from his pulpit, and as he rolled the lower part of the flower in his fingers I could hear a delicate, shrill, complaining sound. He admired the flower for his eyes snapped as he extolled its merits. I am glad I let him talk as long as I did: "I tell you this un's a beauty. Its brighter'n the others. These black velvet stripes run clean up to the tip of the pulpit cover. Some of 'm's green all over or only a little striped. Sometimes Jack is big and sometimes he's little and the blossom parts way down to the bottom. They a'nt all alike, 'cause some make big, red balls o' berries in the fall and others don't, they just die down. O, I know 'cause the root is Indian turnip and that's just as mean in the fall as in the spring. Don't you never taste it if anybody asks you. (Very confidentially) It's a great joke but it bites your tongue awfully. 'T wont hurt you none after a little but I don't want no more o't."

Then we looked at one or two carefully, tore off the pulpit and examined the flowers clustered about the base of the spadix, (that's *one* word I can remember) and soon we discovered that the flowers on all were not alike, that some were clusters of little fruits, tipped with pistils, some were fruitless clumps of stamens and that sometimes both kinds of flowers were on the same plant. He knew much more about it than I but, I helped him to come to the conclusion that the Jack himself was a useless sort of an appendage, unless perhaps he gave up his smooth back as a toboggan slide for insects.

Just then some more of the children came trooping in and the first lesson of the day was over. Who was the teacher? Was that a nature lesson? and was it in the mind of the one who wrote the fragment I have been reading?

I wonder what else the boy brought me. Now there's a violet I never saw before, and Joey with true instinct has pulled up a root. It is white. I know white violets, those dainty, fragrant stars that sometimes sparkle in the bogs, but this is so much larger and coarser, too. There were delicate, purple veins seaming all the petals and the leaves were roundish and shining green in the ones I so admired last summer. These are a sickly, yellowish white, consumptive sisters, I suppose. Their shape is like the birds-foot and their size corresponds. When I put the two blossoms side by side there

seems no difference except in color. Of course this was called the birds-foot violet because of the shape of the leaf, and so far as outline textures is concerned I cannot tell its leaves from those of my pale-faced friend. The roots also are identical. They must be one and the same species, and so there are such things as albinos among the plants * * * *

This is the common violet, the one I saw along the fences and in every protected nook as I walked to school to-day. This, I suppose is the modest violet that hung its head in the nursery rhyme. The outline is peculiar and the side petals are covered near the base with fine, white hairs that form a little, snowy mass. Its leaves are not split and divided into long, narrow sections but are heart-shaped, with the sides rolled inward. They are not smooth, either, but coarse, heavily veined and covered with small hairs * * * * From this bunch of mixed violets I wonder if I could select the different kinds and put each with its proper root and leaves: Here are a few yellow ones that I did not notice before. Well, they are queer things. I had not seen that the slender stems on which nod the bright faces do not come from the top of a blunt root but are branches from a long, half-reclining stem. The purple veins on the lower petal make me think of my sweet little friend, the white one of last season. Well, this is the first seed-pod I ever saw on a violet and it is as woolly-white as ever a sheep. Queer, isn't it, that none of the others seem to be going to seed. That reminds me, wasn't it of the violet that I heard long ago, the violet that spends all its early strength in lavish adornment of its flowers and ripens no fruit, but that later, repenting of its spring wastefulness, it sends out pathetic, half-developed buds that fruit at once without an attempt at display of color? Where did I get that idea? O, it came from a clipping I put in my book and now I have turned to it. This seems better than when I first read it:

"The poets sing of the violet and it is one of our gayest and most versatile friends. Its face is ever singularly expressive whether it peeps laughingly at us from a cosy nest in the moss at the foot of some tall tree, nods to us from its swaying stem in the dark ravine, shrinks from sight in the shadows or leer saucily at us from the hillside. Its colors are never obtrusive but always bright and lively. White along the marshes, yellow in the dells, blue where the woods shade it most, and varying from lavender to the richest velvety purple where sun and soil unite to aid it, everywhere the fairy brushes have touched it daintily and left the soft tracery of their loving thoughts in delicate lines of beauty. Life has no greater pleasures than can be afforded by these bright blossoms showered about us from the hand of provident nature. What would the woods be without the violets?"

I wonder if Joey noticed how many kinds of violets he had? Of course he did, he knows all about them. Why can't his eyes help mine? What interests him ought to interest the others. Suppose I frankly tell him what I wish to do for the school and get his help. He will appreciate the attention, will be benefited by it and from him I will learn. I already know that my pupils can help me almost as much as I can help them and I shall never hesitate to use them. The best teacher I ever had assisted me more by letting me help him than in any other way. And now I know how much I did for him. Joey's bouquet has shown me the way and I'll walk therein.

Well, here are "Indian warriors," as I always called them; "Nose bleeds," the children say and I remember I have heard them called "painted cups." Joey is destructive for he has pulled them all up by the roots, though I believe he told me that was because they always came up that way when he tried to pick them, and now I see that one slender, tapering root would not have

a firm hold on the earth. From the center of this flat rosette the stalk springs up and the scattered leaves along its side change in shape till at the top each has three rather sharp divisions. They change in color, too, and, here at the summit, they are tipped with red and finally are all red and so, greatest surprise of all, the whole brilliant scarlet head is nothing but leaves, not a flower at all. If any one had asked me five minutes ago I should have said that the painted cup was a big, red flower. I have seen great patches of it that made a whole field blush scarlet. Nothing but leaves. Wait, what is this honey-yellow body nestling closely between the gay leaf and the stem. There's the flower tube, stamens, pistil, all, perfect as need be and made safely inconspicuous by the blaze of the protecting leaves.

And, lastly, here is an oddity with whose name and lineage I am acquainted but I no longer think first of the name. What is the flower like? A long, slender, brownish-yellow root; no, not root, for it is scaly like the young stem of the asparagus, and from its lower side white roselets are pendent. Perhaps it ran along the ground under the leaves and so escaped the sun's green paint brush. The end seemed to split into two leaf stalks bearing on the summits great, broad, heart-shaped leaves, not pointed like the violet but so soft and furry. They are as handsome as some of the begonias my landlady prizes so highly. Nestling down at the very end of the stalk and seeming to curl away from the light is the oddest blossom that ever tried to hide from mortal eye. What a strange, uncanny mingling of green, purple and white. It is about the size and shape of a filbert except for the three tapering divisions of the calyx. It has stamens, six of them, broad and united at the base, tapering upward to bear upon their backs the two anthers replete with pollen, and then continuing beyond, a sharp point. There are six divisions of the pistil, and now that I cut across the thickest part of the calyx I find six cells filled with little seeds attached to the center. That hermit flower is a novelty and only Joey's sharp eyes would have found it. I should like to know what it is. I suppose it was a very careless thing to do but I bit the stalk a little and it has all the flavor of ginger, but I supposed ginger was a foreigner. I'll look the matter up. I'll ask Joey where he found it, but it seems to me he said something about finding a flower on the moss under the ledges in that wild ravine back of the schoolhouse. This must be it, for if ever a flower bloomed in seclusion and darkness this one did.

This lonely afternoon has become a memorable one to me. The revelation has come. The spirit is in me. I know the whole secret. It is just this and Joey's flowers have told it to me: "Get as close to us as you can, look at us, handle us and we will do the talking. Our arguments are invincible. We and all nature can speak with a thousand tongues and with an eloquence most persuasive." But one thing remains for me. I must not sit here and dream to-morrow night but go with Joey to the places where he found these flowers and see for myself what they look like in their charming homes. It is possible, and I know it, to fill myself with an enthusiasm that shall lift myself and my whole school from the humdrum of daily work to the plane above, where God and nature dwell. It matters not that I am no scientist. I care not for the microscopic details of internal structure nor the hard names by which men in their dark studies have tried to classify their withered specimens. Give me the flowers here at my hand or let me walk out among them free to look and to love, and my tongue will grow eloquent with something more thrilling than science. If not I, then my pupils shall feel what Wordsworth felt when he wrote:

"To me the meanest flower that blows can give
Thoughts that do often lie too deep for tears."

THE ROBINS.

PROFESSOR F. H. KING.
MADISON, WIS.

Do you recall that bright spring morning late in March or early in April when you looked out upon the lawn, park, pasture or meadow and found it occupied by six, or maybe a dozen, robins where the night before not one was to be seen? Robins with eyes so bright, breasts so red, dresses so prim and voices so cheery; each with a-hop-skip-and-jump, acting so much at home that you wondered which were strangers—you or they? And did you think that these were not the only robins which came down out of the still air at early dawn that morning from the middle of a long journey? They were only one portion of a long and broad wave stretching from the Atlantic to the very foot-hills of the Rocky Mountains, with a front curving across the United States, conforming approximately to the isothermal line of your temperature at that time. From where had these robins come? Some from the several Gulf states, some from Cuba and others still from the chain of Windward Islands even as far south as Tobago. Some had come from Mexico, others from Yucatan and Gaute-mala. Where were they going? Some northward as far as nesting places can be found and food enough to rear a brood of hungry robins; even into Greenland and the islands of Bering sea.

What travelers these robins are! Could they but talk what lessons in geography they might recite! And you must not think that these long wanderings are of the go-where-you-chance sort. Just as your robin came back to nest a second, and maybe a third, year, in the same old apple tree so the birds which will build their nests in sight of Greenland's great ice fields this season, and those too which will find their homes in the far away islands of the Bering sea, are robins which came from those distant places last fall. With sailing charts worked out with the greatest care, with the mariner's compass of extreme sensitiveness and guarded from sources of error in every possible way, with chronometers and astronomical instruments of the finest make for determining latitude and longitude at sea, and with a thorough knowledge of the movements of the earth among the stars, we find that, with all these helps, it requires a man of more than average ability and experience to successfully pilot a vessel from New York to Liverpool; and yet the making of this journey is not one whit more difficult to accomplish than those which father and mother robins undertake when they pilot their children south to spend the winter. But when, the following spring, after five full months have intervened among strange scenes to crowd their memory, those same children leave the silent forms of their parents to molder in the shade of magnolia trees and set out to retrace the whole of that long journey, mile by mile, and accomplish it with the certainty of a skilled mariner, my admiration for the intelligence which gleams from those eyes passes all bounds and I wonder how a boy can, in wanton cruelty, take the life of such as these, or how so many women of our day can practice the savagery of adorning their persons with the mantles snatched from bosoms heaving with the love and song of migratory birds.

I cannot believe, as some do, that these wonderful journeys are directed to successful ends either by a blind instinct or by some mysterious magnetic sense. It seems to me they must be rendered possible because the robin has an extremely retentive memory of landmarks and very discriminating powers of observation in this direction. What does our tiny humming bird do? It builds its nest upon one of a hundred limbs in a tree, which is itself one of millions seemingly like it in a vast forest, and then goes to great pains to make it more difficult to find by decking it over with lichens so that it shall resemble the knot beside it, from which a dead limb has broken, and then while the mother bird is patiently hatching those tiny eggs the male flies miles away into open fields and meadows, where flowers abound, in quest of nectar and insects for his mate, but only to return again with the directness of an arrow when the load has been procured. Which one of you would undertake such a task as this when there is so much at stake? And yet two small eyes, scarcely larger than cockle seeds, must form the pictures of all those to us, monotonous scenes and a brain out-weighted by a grain of barley must register them and direct the ruby-throat back to his cherished home and family. Now the migratory journeys of birds are only more difficult than this because the landmarks must be remembered for a longer time.

Almost every one has had his attention arrested by the joyous song the robin pours out into the balmy spring air as he tries to outdo his rival brother perched upon the topmost bough of some neighboring tree. But have you compared the robin's song with the exquisite ones of his near relatives, the cat-bird and brown-thrush, which are executed a little later in the season? Do I hear you say no one ever heard a mewling cat-bird sing? Certainly he sings and so sweetly as to vindicate his kinship with the prince of songsters, the mocking bird, himself. The cat-bird has few friends though he merits many; but as Dr. Coues says "The cat-bird has certainly a good deal to contend with. * * * His dress is positively ridiculous—who could expect to rise in life wearing a salt and pepper jacket, a black velvet scull-cap and a large red patch on the seat of his pantaloons? Don't wear a red patch on the seat of his pantaloons! O yes he does, of a rich chestnut color and every day in the year. You look closer and see.

The brown-thrush we usually call the corn-planting bird because of the words we imagine his song to express "dig-a-hole, dig-a-hole, put-it-in, cov-it-up, cov-it-up" given in quick succession, and when he ended his song, as he frequently did with "quick, quick," there was no time to be lost. Listen for the songs of these two birds and compare them with that of the robin.

Have you watched the robins during their times of home-building? As they set up the framework of the house and then plaster it inside with mud and afterwards add a soft lining? Do you know how long after the house is completed before the four to six eggs are laid? And then how long the eggs must be incubated before the hungry birds with monstrous mouths are demanding to be fed? Do you know the number of meals young robins get each day? And have you sat down in some secluded spot and counted the number of trips the pair of robins make before those wide-open yellow mouths cease to rise on their slender necks above the brim of the nest at the slightest jar or sound? If you have not, to do so would both amuse and amaze you.

To those boys and girls who are practicing amateur photography I would suggest that one of the nicest things they could do would be to

make a study of the robin or some other bird during the season, photographing them in as many different ways and attitudes illustrating their habits and modes of life as possible.

It is conceded by those who have given the subject the most careful study that the valuable services rendered by the robin are so far in excess of the damage done by eating small fruits that the losses are insignificant in comparison. One of the most destructive classes of farm insects is the family of cut worms, and they are at the same time the most difficult to control by artificial means; but multitudes of these worms are destroyed by the robins and there are few other birds which do destroy them in such numbers. Early in the morning, and toward the close of evening the robin may often be seen searching after cutworms in meadows, pastures and lawns and when thus engaged it hops about, apparently gazing more at distant objects than searching for something near at hand; then, suddenly, it commences tearing up the old grass and turf with its bill and in another instant stands triumphant with its wriggling prize in its mouth, for it rarely digs in vain. I have seen a robin capture in this manner five cutworms in less than ten minutes, and five other robins sailed within view doing the same work.

Professor Treadway, of Cambridge, showed by careful weighing that young robins in the nest require more than their weight of animal food daily, and that in the case upon which he experimented a little more than an ounce of animal food was taken daily after the bird had attained full size. At this rate 1,000,000 robins would consume daily thirty-three tons of animal food. In view of these facts we may safely conclude with Dr. Coues that "the prejudice which some persons entertain against the robin is unreasonable, and the wholesale slaughter of these birds which annually takes place in some localities is as senseless as it is cruel. Few persons have any idea of the enormous—the literally incalculable—number of insects that robins eat each year."

What Robin Told.

How do the robins build their nests?

Robin Redbreast told me.

First a wisp of amber hay

In a pretty round they lay;

Then some shreds of downy floss,

Feathers, too, and bits of moss,

Woven with a sweet, sweet song,

This way, that way, and across,

That's what Robin told me.

Where do the robins hide their nests?

Robin Redbreast told me.

Up among the leaves so deep,

Where the sunbeams rarely creep.

Long before the winds are cold,

Long before the leaves are gold,

Bright-eyed stars will peep, and see

Baby robins, one, two, three;

That's what Robin told me.

—GEO. COOPER.

PROGRAMS AND SELECTIONS.

DISTRICT SCHOOL ARBOR DAY PROGRAM.

Music—America.

Reading Arbor Day proclamation.

Roll call—Answering with quotations.

Brief essays—First scholar may choose for a subject, "My Favorite Tree is the Maple," and give reasons. Similar essays on the oak, elm, linden, pine, and other trees may follow.

Reading—*The Forest Hymn*—Bryant.
Song.

Recitation—*The Tree Party*.

Marching song.

Vote upon a state tree.

Planting and dedication of trees.

Wisconsin Arbor Day song—Eben E. Rexford.

SUGGESTIONS.—When trees are planted the pupils should appoint a committee to care for them during the next year.

Arrangements for planting a tree should be carefully made before the exercises, so that there may be no unnecessary delays.

When trees are dedicated to authors, statesmen or other distinguished persons, a brief statement should be made concerning the services of these persons, followed, where it is practicable, by quotations from their writings or other public utterances.

In many places Arbor Day will furnish the best opportunity for forming local or school horticultural societies, improvement associations, or shade-tree planting circles.

Teachers will understand that the program given above is only suggestive. It may be greatly varied, and should be made strong on the lines that seem to excite the greatest interest among the pupils. The subjoined program shows how practical the discussions may become if the people of the district are interested in public improvements:

SPECIMEN PROGRAM OF ARBOR DAY EXERCISES IN CONNECTICUT.

1. A short "History of Arbor Day," by some of the young members.
2. "What we have accomplished to-day." Short report from every member present.
3. "Best list of ornamental plants and shrubs, and care of same for small home grounds."
4. "Plan for the homeacre, with list of trees, plants and shrubs for same; when and how to plant them."
5. "Nut-bearing trees. Propagation and care of same."
6. "Shade trees for the highway. Best ten varieties; give botanical as well as common names."
7. "The varieties of trees on our farm, common and botanical names. Reports from at least three of 'the boys,'"
8. "Varieties of trees in the highway between home and the Grange Hall." Reports expected from three or more members living a mile or more away.
9. "Best grasses for a shady lawn; also those for a sunny lawn."
10. "Walks and drives about house and barns. How to make them, and material to be used."
11. "What fruit trees and plants can be used for ornamental purposes, and how shall we do it?"
12. "School grounds. What they are and what they should be."
13. "The back side of the other fellow's barn."
14. "The family wood supply, and how my neighbors handle it."
15. "Trimming fruit trees."
16. "Profitable tree planting."
17. "Hardy roses and their culture."
18. "The front fence, and what shall we do with it?"
19. "Lawn-mowers and more lawn."
20. "Some hints to the men who work the highways and are continually 'ripping up' things."
21. "What shall we do with the signs that are nailed to our beautiful trees?"

Good-Morning.

The year's at the spring,
The day's at the morn;
Morning's at seven.
The hillside's dew-pearled;
The lark's on the wing;
The snail's on the thorn;
God's in his heaven—
All's right with the world.

—ROBERT BROWNING.

The Tree Party.

We had a fine party last night on the lawn;
All the trees and the flowers were invited;
It never broke up till the first peep of dawn,
And the guests went away quite delighted.

The Maple and Pine gave this banquet so fine,
Spread out in the moonlight before us;
The music was planned by a whippoorwill band,
With a cricket and katydid chorus.

The jolliest set in the garden had met;
Not a scoffer was there, nor a mourner,
Except a rude thorn, whom they treated with scorn,
As he grumbled away in his corner.

The loveliest creatures wore emerald green.
With dewdrops for jewels resplendent;
But the stately Rose Queen, all in scarlet was seen,
And in purple her Lilac attendant.

Now, the Oak is a hundred years old, as they tell,
And very exalted his station;
And so, on this midsummer night, it befel
That they gave him a royal ovation.

With a dignified grace he arose in his place
And thanked all his neighbors politely,
Described the rough ways of his pioneer days
And the hardships recalled now so lightly.

Then all the night long there was laughter and song,
In a language the trees comprehended, [throng,
Until daylight fell strong on the mirth-making
And the famous tree party was ended.

—A. L. SHATTUCK.

The Class Tree.

Air—"America."

Grow thou and flourish well,
Ever the story tell
Of this glad day;
Long may thy branches raise
To heaven our grateful praise;
Waft them on sunlight rays,
To God, away.

Deep in the earth to-day,
Safely thy roots we lay,
Tree of our love;
Grow thou and flourish long;
Ever our grateful song
Shall its glad notes prolong
To God above.

"Let music swell the breeze,
And ring from all the trees,"
On this glad day;
Bless Thou each student band
O'er all our happy land;
Teach them Thy love's command,
Great God, we pray.

—MAY A. S. THOMAS.

Two Little Roses.

One merry summer day
Two roses were at play;
All at once they took a notion
They would like to run away.

Queer little roses;
Funny little roses,
To want to run away!

They stole along my fence;
They clambered up my wall;
They climbed into my window
To make a morning call!

Queer little roses;
Funny little roses,
To make a morning call!

JULIA P. BALLARD.

May.

All the buds and bees are singing;
All the lily bells are ringing;
All the brooks run full of laughter,
And the wind comes whispering after.
What is this they sing and say?
"It is May!"

Look, dear children, look! the meadows,
Where the sun-bine chases shadows,
Are alive with fairy faces,
Peeping from their grassy places.
What is this the flowers say?
"It is May!"

See! The fair blue sky is brighter,
And our hearts with hope are lighter.
All the bells of joy are ringing;
All the grateful voices singing;
All the storms have passed away.
"It is May!"

Arbutus.

If spring has maids of honor,
And why should not the spring,
With all her dainty service,
Have thought of some such thing?

If spring has maids of honor,
Arbutus leads the train;
A lovelier, a fairer,
The spring would seek in vain.

—HELEN HUNT JACKSON.

April in England.

Oh, to be in England
Now that April's there,
And whoever wakes in England
Sees, some morning, unaware,
That the lowest boughs and the brushwood sheaf
'Round the elm-tree bole are in tiny leaf,
While the chaffinch sings on the orchard bough
In England—now!

—ROBERT BROWNING.

The Brown Thrush.

There's a merry brown thrush sitting up in the tree,
 "He's singing to me! he's singing to me!"
 And what does he say, little girl, little boy?
 "Oh! the world's running over with joy!
 Don't you hear? Don't you see?
 Hush! Look! In my tree;
 I'm as happy as happy can be!"

And the brown thrush keeps singing, "A nest, do you
 And five eggs, hid by me in the juniper-tree? [see
 Don't meddle! don't touch! little girl, little boy,
 Or the world will lose some of its joy.
 Now I'm glad! Now I'm free!
 And I always shall be
 If you never bring sorrow to me."

So the merry brown thrush sing: away in the tree,
 To you and to me, to you and to me;
 And he sings all the day, little girl, little boy,
 "Oh! the world's running over with joy!
 But long it won't be,
 Don't you know? Don't you see?
 Unless we are good as good can be."

—LUCY LARCOM.

The Child's World.

"Great, wide, beautiful, wonderful world,
 With the wonderful water around you curled,
 And the wonderful grass upon your breast—
 World, you are beautifully drest!

"The wonderful air is over me
 And the wonderful wind is shaking the tree;
 It walks on the water and whirls the mills,
 And talks to itself on the top of the hills.

"You, friendly earth, how far do you go [flow?
 With the wheat-fields that nod and the rivers that
 With cities and gardens, and cliffs and isles.
 And people upon you for thousands of miles?

"Ah, you are so great and I am so small,
 tremble to think of you, World, at all;
 And yet, when I said my prayers to day,
 A whisper inside of me seemed to say: [a dot:
 'You are more than the earth, though you are such
 You can love and think, and the Earth cannot.'"

—MATTHEW BROWNE.

Robins in the tree-top, blossoms in the grass;
 Green things a-growing everywhere you pass;
 Sudden little breezes; showers of silver dew;
 Black bough and bent twig budding out anew!
 Pine tree and willow tree, fringed elm and larch—
 Don't you think that May-time's pleasanter than
 March?

T. B. ALDRICH.

Who does his duty, is a question
 Too complex to be solved by me;
 But he, I venture the suggestion,
 Does part of his who plants a tree.

The Little Lazy Cloud.

A pretty little cloud, away up in the sky,
 Said it did not care if the earth was dry:
 'Twas having such a nice time sailing all around,
 It wouldn't, no it wouldn't tumble, to the ground.

So the pretty little lilies hung their aching heads,
 And the golden pansies cuddled in their beds;
 The cherries couldn't grow a bit, you would have
 pitied them;
 They'd hardly strength to hold to the slender little
 stem.

By and by the little cloud felt a dreadful shock,
 Just as does a boat when it hits upon a rock.
 Something ran all through it, burning like a flame,
 And the little cloud began to cry as down to earth it
 came.

Then old Grandpa Thunder, as he growled away,
 Said: "I thought I'd make you mind 'fore another
 day;
 Little clouds were made to fall when the earth is dry,
 And not go sailing round away up in the sky."

And old Grandma Lightning, flitting to and fro,
 Said: "What were you made for, I would like to
 know,
 That you spend your precious time sailing all around,
 When you know you ought to be buried in the
 ground.

The lilies dear, and pansies, all began to bloom,
 And the cherries grew and grew till they took up all
 the room.

Then by and by the little cloud, with all its duty
 done,
 Was caught up by a rainbow and allowed a little fun.

The Pine Tree.

Old as Jove,
 Old as love,
 Who of me
 Tells the pedigree?
 Only the mountains old,
 Only the waters cold,
 Only moon and star,
 My coevals are.
 Ere the first fowl sung,
 My relenting boughs among,
 Ere Adam wived,
 Ere Adam lived,
 Ere the duck dived,
 Ere the bees hived,
 Ere the lion roared,
 Ere the eagle soared,
 Light and heat, land and sea,
 Spake unto the oldest tree.

—EMERSON.

How pleasant the life of a bird must be,
 Flitting about in each leafy tree!
 In the leafy tree, so broad and tall,
 Like a green and beautiful palace hall.

—MARY HOWITT.

Mrs. June's Prospectus.

Mrs. June is ready for school,
Presents her kind regard,
And for all her measures and rule,
Refers to the following

CARD:

To parents and friends: Mrs. June,
Of the firm of Summer and Sun,
Announces the opening of her school,
Established in the year one.

An unlimited number received;
There's nothing at all to pay;
All that is asked is a merry heart,
And time enough to be gay.

The Junior class will bring
In lieu of all supplies,
Eight little fingers and two little thumbs
For the making of pretty sand-pies.

The Senior class, a mouth
For strawberries and cream,
A nose apiece for a rose apiece
And a tendency to dream.

The lectures are thus arranged:
Professor Cherry Tree
Will lecture to the Climbing Class,
Terms of instruction—free.

Professor De-Forest Spring
Will take the class on Drink;
And the class on Titillation,
Sage Mr. Bobolink.

Young Mr. Ox-Eye Daisy
Will demonstrate each day
On botany, on native plants,
And the properties of hay.

Miss Nature, the class in Fun
(A charming class to teach);
And the Swinging class and the Bird's-nest class,
Miss Hickory and Miss Beech.

And the Sleepy class at night,
And the Dinner class at noon,
And the Fat and Laugh and Roses class,
They fall to Mrs. June,

And she hopes her little friends
Will be punctual as the sun;
For the term, alas! is very short,
And she wants them every one.

—SUSAN COOLIDGE.

The Unfruitful Tree.

There stood in a beautiful garden
A tall and stately tree,
Crowned with its shining leafage,
It was wondrous fair to see.
But the tree was always fruitless;
Never a blossom grew
On its long and beautiful branches
The sunny season through.

The lord of the garden saw it,
And he said, when leaves were sere,
"Cut this tree down! It is worthless—
And plant another here.
My garden is not for beauty
Alone, but for fruit as well,
And no barren tree must cumber
The place in which I dwell."

The gardener heard in sorrow,
For he loved the beautiful tree,
As we love some things about us
That are only fair to see.
"Leave it one season longer,
Only one more, I pray!"
He pleaded. But the master
Was firm, and answered "Nay!"

Then the gardener dug about it
And cut its roots apart,
And the fear of the fate before it
Struck home to the poor tree's heart.
Faithful and true to his master,
Yet loving the tree so well,
The gardener toiled in sorrow
Till the stormy evening fell.

"To-morrow," he said, "I will finish
The task I have begun."
But the morrow was wild with tempest,
And the work remained undone.
And through all the long bleak winter
There stood the desolate tree,
And those who had known and loved it
Were sorrowful to see.

At last the sweet spring weather
Made glad the hearts of men,
And the trees in the lord's fair garden
Put forth their leaves again.
"I will finish my task to-morrow,"
The busy gardener said.
And thought, with a thrill of sorrow,
That the beautiful tree was dead.

The lord came into his garden
At an early hour next day,
And then to the task unfinished
The gardener led the way.
And lo! all white with blossoms,
Fairer than ever to see,
In its promise of coming fruitage,
Stood the erstwhile barren tree.

"It is well," said the lord of the garden,
And he and the gardener knew
That out of its loss and trial
The promise of fruitfulness grew.
It is so with some lives that cumber,
For a time, the Lord's domain;
Out of trial and mighty sorrow
There cometh a countless gain,
And fruit for the Master's garden
Is borne of loss and pain.

EBEN E. REXFORD, Shiocton, Wis.

A Forest Hymn.

The groves were God's first temples. Ere man
To hew the shaft, and lay the architrave, [learned
And spread the roof above them—ere he framed
The lofty vault, to gather and roll back
The sound of anthems; in the darkling wood,
Amid the cool and silence, he knelt down,
And offered to the mightiest solemn thanks
And supplication. For his simple heart
Might not resist the sacred influences
Which, from the still twilight of the place,
And from the gray old trunks that high in heaven
Mingled their mossy boughs, and from the sound
Of the invisible breath that swayed at once
All their green tops, stole over him, and bowed
His spirit with the thought of boundless power
And inaccessible majesty. Ah, why
Should we, in the world's riper years, neglect
God's ancient sanctuaries, and adore
Only among the crowd, and under roofs
That our frail hands have raised? Let me, at least,
Here, in the shadow of this aged wood,
Offer one hymn—thrice happy if it find
Acceptance in His ear.

Father, thy hand
Hath reared these venerable columns; Thou
Didst weave this verdant roof. Thou didst look down
Upon the naked earth, and, forthwith, rose
All these fair ranks of trees. They, in thy sun,
Budded, and shook their green leaves in the breeze,
And shot toward heaven. The century-living crow
Whose birth was in their tops, grew old and died
Among their branches, till, at last, they stood,
As they now stand, massy, and tall, and dark,
Fit shrine for humble worshiper to hold
Communion with his Maker. These dim vaults,
These winding aisles, of human pomp or pride
Report not. No fantastic carvings show
The boast of our vain race to change the form
Of thy fair works. But Thou art here—Thou fill'st
The solitude. Thou art in the soft winds
That run along the summit of these trees
In music; Thou art in the cooler breath
That from the inmost darkness of the place
Comes, scarcely felt; the barky trunks, the ground,
The fresh, moist ground, are all instinct with Thee.

Here is continual worship. Nature, here,
In the tranquillity that Thou dost love,
Enjoys thy presence. Noiselessly around,
From perch to perch, the solitary bird
Passes; and yon clear spring, that, midst its herbs,
Wells softly forth, and, wandering, steeples the roots
Of half the mighty forest, tells no tale
Of all the good it does. Thou hast not left
Thyself without a witness, in the shades,
Of thy perfections. Grandeur, strength and grace
Are here to speak of Thee. This mighty oak—
By whose immovable stem I stand and seem
Almost annihilated—not a prince
In all that proud old world beyond the deep
E'er wore his crown as loftily as he
Wears the green coronal of leaves with which
Thy hand has graced him. Nestled at his root

Is beauty such as blooms not in the glare
Of the broad sun. That delicate forest flower,
With scented breath and look so like a smile,
Seems, as it issues from the shapeless mould,
An emanation of the indwelling Life,
A visible token of the upholding Love,
That are the soul of this great universe.

* * * * *

—BRYANT.

To a Waterfowl.

Whither, midst falling dew,
While glow the heaven with the last steps of day,
Far, through their rosy depths, dost thou pursue
Thy solitary way?

Vainly the fowler's eye
Might mark thy distant flight to do thee wrong,
As, darkly seen against the crimson sky,
Thy figure floats along.

Seek'st thou the plashy brink
Of weedy lake, or marge of river wide,
Or where the rocking billows rise and sink
On the chafed ocean-side?

There is a Power whose care
Teaches thy way along that pathless coast—
The desert and illimitable air—
Lone wandering, but not lost.

All day thy wings have fanned,
At that far height, the cold, thin atmosphere,
Yet stoop not, weary, to the welcome land,
Though the dark night is near.

And soon that toil shall end;
Soon shalt thou find a summer home, and rest,
And scream among thy fellows; reeds shall bend,
Soon, o'er thy sheltered nest.

Thou'rt gone! The abyss of heaven
Hath swallowed up thy form; yet, on my heart
Deeply has sunk the lesson thou hast given,
And shall not soon depart.

He who, from zone to zone,
Guides through the boundless sky thy certain flight,
In the long way that I must tread alone,
Will lead my steps aright.

—BRYANT.

Nature never did betray
The heart that loved her: 'Tis her privilege,
Through all the years of this, our life, to lead
From joy to joy; for she can so inform
The mind that is within us, so impress
With quietness and beauty, and so feed
With lofty thoughts, that neither evil tongues,
Rash judgments, nor the sneers of selfish men,
Nor greetings where no kindness is, nor all
The dreary intercourse of daily life,
Shall e'er prevail against us, or disturb
Our cheerful faith, that all which we behold
Is full of blessings.

—WORDSWORTH.

THE TREE THAT TRIED TO GROW.

One time there was a seed that wished to be a tree. It was fifty years ago, and more than fifty—a hundred, perhaps,

But first there was a great bare granite rock in the midst of the Wendell woods. Little by little, dust from a squirrel's paw, as he sat upon it eating a nut, fallen leaves, crumbling and rotten, and perhaps the decayed shell of a nut, made earth enough in the hollows of the rock for some mosses to grow, and for the tough little saxifrage flowers which seem to thrive on the poorest fare, and look all the healthier, like very poor children.

Then, one by one, the mosses and blossoms withered and turned to dust, until, after years and years and years, there was earth enough to make a bed for a little feathery birch seed which came flying along one day.

The sun shone softly through the forest trees; the summer rain pattered through the leaves upon it; and the seed felt wide awake and full of life. So it sent a little pale-green stem up into the air, and a little white root down into the shallow bed of the earth. But you would have been surprised to see how much the root found to feed upon in only a handful of dirt.

Yes, indeed! And it sucked and sucked away with its little hungry mouths, till the pale-green stem became a small brown tree, and the roots grew tough and hard.

So, after a great many years, there stood a tall tree as big round as your body, growing right upon a large rock, with its big roots striking into the ground on all sides of the rock, like a queer sort of a wooden cage.

—FRANCIS LEE.

I never pluck the rose; the violet's head hath shaken at my breath upon its bank and not reproached me; the ever-sacred cup of the pure lily hath between my hands felt safe, unsoiled, nor lost one grain of gold.

—WALTER SAVAGE LANDOR.

THE FIELD LILIES.

Here, too, grew the graceful, brown-spotted red and yellow field lilies, but they did not bloom until midsummer. I rarely had the pleasure of gathering these regal blossoms with my own hands, for by the time they were ready to bloom we were forbidden to run through the meadow, lest we should trample and tangle the high timothy grass, as the mowing season was at hand. However, when the mowers with their shining scythes cut the grass, if my father was in the field he was sure to look out for the lilies and to pick them out from the swaths of grass and stand them in a jug of water that was kept in a shady place for the men to drink. Then he would call to me, and I would run from the house to the hayfield to bring back the tall stalks surrounded with their long, tapering leaves, each bearing at its summit several splendid flowers. I used to think these must have been the kind that Christ meant when he said, "Consider the lilies of the field." I have since learned that the wild lilies of Palestine are much like our own.

Glimpses at Plant Life.

The Romans, as early as the time of Romulus, we are told, had already instituted a festival in honor of Flora, whose name explains itself. This festival was called Floralia, and was commenced on the 28th of April, continuing till the 1st of May. It was held to show pleasure and joy at the re-appearance of spring blossoms and flowers, the harbingers of fruit. "When the flowers appeared in the fields and the time of the singing of the birds was come; when the fig tree put forth her figs and the vine with tender grapes gave out their smell," the Flora, the goddess of flowers and spring, was honored by the people, who—

"Let one great day
To celebrate sports and floral play,
Be set aside."

Give fools their gold and and knaves their power;
Let fortune's bubbles rise and fall;
Who sows a field, or trains a flower,
Or plants a tree, is more than all.

—WHITTIER.

MAN AND THE DEGRADATION OF ENERGY.

Men are continually at work altering the distribution of matter and energy on the earth. Gold is sought for in all lands, and accumulated in enormous quantities in London, Paris, Berlin and other towns. Diamonds are more numerous in Amsterdam than in Africa, India or Brazil; and so with other mineral commodities. The salts of the soil upon which its fertility depends are being removed by every crop of wheat, to be ultimately cast as useless sewage into the sea. Land deprived of its salts ceases to yield crops; the natural process of restoration by weathering is too slow, and manures, which every year are becoming scarcer, must be sought far and near to replace them. No animal but man is so improvident. All others restore the mineral constituents to the land from which they gathered their food, and so insure a continuous supply. The potential energy laboriously stored in growing trees is destroyed by reckless timber cutting, and the use of wood as fuel. The accumulated savings of energy stored up in coal are being expended in every industrial occupation, and coal is rapidly becoming scarcer. Every consumption of energy, except that of the regular income of solar radiation, is impoverishing the earth, and accelerating the natural process of the degradation of energy. The great steamer, driving its giant bulk across the ocean at twenty miles an hour, consumes as much potential energy in every revolution of the propeller as served in former days for the stately clipper, rising and dipping over the crests of the sea under the impulse of the sun-driven winds, to make the whole journey. Tidal power, already utilized to some extent, and likely to be made use of increasingly, simply does work off the energy of the earth's rotation, and, although in a very minute degree, its employment hastens the time when earth and moon will have the same period of rotation. Similarly, all processes now proudly being increased in power and speed dissipate ever faster the wealth of potential energy that nature lays up at an ever-diminishing rate. Wind and water

power and the earth's store of internal heat are the only non-wasteful sources of work. Nothing is given for nothing, and even the knowledge revealed by the scientific study of nature, that the power for effecting these processes will not last forever, has been dearly bought. Since the true part played by energy has been understood in fact, though possibly not in name, the governments of all civilized nations have exerted themselves to encourage the most economical processes of manufacture, the most satisfactory systems of agriculture, the most intelligent methods of sewage disposal, and particularly to insure the continuance, and if possible the increase, of the forests of the world, on which its prosperity, and even its habitability, largely depend.

—*The Realm of Nature.*

PALESTINE.

Palestine presents a very striking example of climate altered by human action. In the days of the Israelites the steep mountain slopes were terraced artificially by walls supporting a narrow strip of soil, on which grain, vines, olives and fruit trees of many kinds were grown. The rainfall was regular and gentle, and after percolating through the terraces, formed perennial springs at the foot of the slopes, feeding the brooks which rippled through the valleys. Now, by neglect, the terraces have been broken down, and the soil is all swept into the valleys. The mountainsides, being bare and rocky, allow the occasional heavy showers to dash down in impetuous torrents to flood temporary streams, which, when the rain passes, give place to channels of dry stones. The land becomes baked in the fierce rays of the sun by day, and chilled by intense radiation through the clear dry air at night, the range of temperature having increased as the rainfall diminished.

—*The Realm of Nature.*

He prayeth well who loveth well
Both man and bird and beast;
He prayeth best who loveth best
All things, both great and small;
For the dear Lord who loveth us,
He made and loveth all.

Quotations.

The eye sees what it has the means of seeing, truly.
You must have the bird in your heart before you can
find it in the bush. The eye must have purpose and aim.
No one ever yet found the walking fern without hav-
ing the walking fern in his mind. A person whose
mind is full of Indian relics picks them up in every
field he walks through.

—JOHN BURROUGHS—*Sharp Eyes.*

Arbor Day will make the country visibly more
beautiful every year. Every little community, every
school district, will contribute to the good work.
The school house will gradually become an ornament
as it is already the great benefit of the village, and
the children will be put in the way of living upon
more friendly and intelligent terms with the bounti-
ful nature which is so friendly to us.

—GEORGE WILLIAM CURTIS.

A quest of river grapes, a mocking thrush,
A wild rose, a rock-loving columbine,
Alive my worst wounds.

—EMERSON.

Of't have I walked these woodland ways,
Without the least foreknowing
That underneath the withered leaves
The fairest flowers were blowing.

If thou art worn and hard beset
With sorrows, that thou wouldst forget,
If thou wouldst read a lesson that will keep
Thy heart from fainting and thy soul from sleep,
Go to the woods and hills! No tears
Dim the sweet look that nature wears.

—LONGFELLOW.

Joy to the thought of our own own tree!
Long may its branches shade our way;
This task shall ever our pleasure be,
Planting a tree on Arbor Day.

He who plants a tree,
He plants love;
Tents of coolness spreading out above
Wayfarers he may not live to see.
Gifts that grow are best;
Hands that bless are blest;
Plant; life does the rest!
Heaven and earth help him who plants a tree
And his work its own reward shall be.

—LUCK LARCOM.

There is no glory in star or blossom,
Till looked upon by a loving eye;
There is no fragrance in April breezes
Till breathed with joy as they wander by.

—BRYANT.

For Nature beats in perfect tune,
And rounds with rhyme her every rune,
Whether she work in land or sea,
Or hide underground her alchemy.
Thou canst not wave thy staff in air,
Or dip thy paddle in the lake,
But it carves the bow of beauty there,
And the ripples in rhymes the oars forsake.

—EMERSON.

There's something in the air
That's new and sweet and rare,—
A scent of summer things,
A whirr as if of wings.

There's something, too, that's new
In the color of the blue
That's in the morning sky
Before the sun is high.

—NORA PERRY.

The stars are tiny daisies high,
Opening and shutting in the sky;
While daisies are the stars below,
Twinkling and sparkling as they grow.

The star buds blossom in the night,
And love the moon's calm, tender light;
But daisies bloom out in the day,
And watch the strong sun on his way.

"Little by little," an acorn said,
As it slowly sank in its mossy bed,
"I am improving every day,
Hidden deep in the earth away."
Little by little each day it grew;
Little by little it sipped the dew;
Downward it sent out a thread-like root;
Up in the air sprang a tiny shoot.
Day after day, and year after year,
Little by little the leaves appear;
And the slender branches spread far and wide
Till the mighty oak is the forest's pride.

A traveller, through a dusty road,
Strewed acorns on the lea;
And one took root and sprouted up,
And grew into a tree.
Love sought its shade at evening time
To breathe his early vows;
And Age was pleased, in heats of noon,
To bask beneath its boughs.
The dormouse loved its dangling twigs,
The birds sweet music bore;
It stood a glory in its place,
A blessing evermore.

—CHARLES MACKAY.

If I were a bird I would warble a song,
The sweetest and finest that ever was heard,
And build me a nest on the swinging elm tree;
Oh, that's what I'd do if I were a bird.

If I were a flower I'd hasten to bloom,
And make myself beautiful all the day through,
With drinking the sunshine, the wind and the rain;
Oh, if I were a flower, that's what I'd do.

Peeping, peeping, here and there,
In flowers and meadows everywhere,
Coming up to find the spring,
And hear the robin redbreast sing.
Creeping under children's feet,
Glancing at the violets sweet;
Growing into tiny bowers,
For the dainty meadow flowers.
We are small, but think a minute
Of a world with no grass in it.

Frank-hearted hostess of the field and wood,
Gipsy, whose roof is every spreading tree,
June is the pearl of our New England year.
Still a surprise, though expected long,
Her coming startles. Long she lies in wait,
Makes many a feint, peeps forth, draws coyly back,
Then, from some southern ambush in the sky,
With one great gush of blossom storms the world.
A week ago the sparrow was divine;
The bluebird, shifting his light load of song
From post to post along the cheerless fence,
Was as a rhymist ere the poet came;
But now, O rapture! sunshine winged and voiced,
Pipe blown through by the warm, wild breath of the West

Shepherding his soft droves of fleecy cloud,
Gladness of woods, skies, waters, all in one,
The bobolink has come, and, like the soul
Of the sweet season vocal in a bird,
Gurgles in ecstasy we know not what
Save June! Dear June! Now God be praised for June!

—LOWELL, *From Under the Willows.*

It is better to know the habits of one plant than
the names of a thousand; and wiser, to be happily
familiar with those that grow in the nearest field,
than arduously cognizant of all that plume the isles
of the Pacific, or illumine the Mountains of the Moon.

—RUSKIN.

When we plant a tree we are doing what we can to
make our planet a more wholesome and happier
dwelling-place for those who come after us, if not for
ourselves. As you drop the seed, as you plant the
sapling, your left hand hardly knows what your right
hand is doing. But Nature knows, and in due time
the Power that sees and works in secret will reward
you openly.

—HOLMES.

Teach the boys and girls that the tree that they
plant on their gala day will rear its green coronal of
leaves to the summer sky in the years that lie far on
in the distant future. That each new summer chil-
dren will disport themselves round its giant stem,
and silver throated songsters will carol their joy
amid its branches. That the distant traveler, as he
cools his heated brow beneath the tree that they
planted by the roadside, will bless the hand that will
then be silent and still.

Notes.

Arbor Day is not a legal holiday. Teachers are
requested to substitute Arbor Day exercises for the
regular class work.

The *Arbor Day Manual* is a handsome octavo vol-
ume of 450 pages, containing a great variety of selec-
tions for Arbor Day programs, and a number of
songs set to music. It also contains a number of col-
ored engravings. Each of the larger school libraries
should contain a copy of it. The publishers, Weed,
Parsons & Co., Albany, N. Y., will furnish one copy
for \$2.50, postage paid, or will send two copies to one
address for \$4.00.

Trees of the Northern United States, by Austin C.
Apgar, is a very useful and practical handbook for
those who wish to make a careful study of our native
trees. It is published by the American Book Co.,
Chicago. Price \$1.00.

Glimpses at the Plant World, by Fanny D. Bergen,
contains a series of interesting chapters on common
plants, that will be found entertaining and instructive
by teachers and pupils who have not made a study of
botany in the text-books on that subject. Published
by Lee & Shepard, Boston, Mass. Price seventy-five
cents.

The Wisconsin Arbor Day circular for 1892 was
sent to nearly every school in the state, and should
be found in all school libraries. It contains a large
number of articles and choice poetical and prose se-
lections which teachers will find useful in preparing
for Arbor Day. Teachers should leave this circular
in the school library for future use.

The grateful acknowledgments of the state super-
intendent are due to the *Garden and Forest* Publish-
ing Co., of New York, for the use of the cut of the
white elm presented on page 19; to Mr. C. E. Birge,
of Whitewater, for the beautiful and appropriate de-
sign for the cover; to Mr. Eben E. Rexford, of Shio-
cton, for the inspiring "Wisconsin Arbor Day Song;"
to President Albert Salisbury, of Whitewater, for
the picture of the Cravath Oak; and to other con-
tributors whose names appear in connection with
the articles they have so kindly prepared.

ARBOR DAY PROGRAM.

MRS. CORA LEE CHAMBERLAIN, River Falls, Wis.

1. SONG—"AMERICA"—*Stanzas 1 and 2.*

My country, 'tis of thee,
Sweet land of liberty,
Of thee I sing:
Land where my fathers died;
Land of the pilgrim's pride;
From every mountain-side
Let freedom sing.

My native country, thee—
Land of the noble free—
Thy name I love;
I love thy rocks and rills,
Thy woods and templed hills;
My heart with rapture thrills
Like that above.

2. CONCERT RECITATION—*School.*

The bluebird chants from the elm's long branches,
A hymn to welcome the budding year.
The south wind wanders from field to forest,
And softly whispers, "The spring is here."

—BRYANT.

3. RECITATION.

Yes, indeed, the spring is here; and it is a very lively spring too, for the trees have all heard that the children of Wisconsin are to choose a state tree today.

What a fluttering of leaves there is as the trees discuss the news!

They have sent us a message, saying that it is impossible for them to be present in person, as it is not their custom to pay visits, but they will send a few trusty friends who will present their claims to us.

Why! here they come now.

(A knock is heard. The teacher opens the door. Enter six boys and six girls, representing, by twos, the oak, maple, willow, pine, elm and poplar.)

Each child carries a long branch of his chosen tree. They march to the front in pairs, separate and form a line facing the school. Branches should be held firmly at the right side in a line with the body, right and left arms being held as straight as possible. This is *Position*:

4. FORESTERS' DRILL.

Present Arms.—Branches are held uppermost in line with the body, the left hand holding branch near the lower end, right hand grasping branch one foot higher up.

Carry Arms.—Bring branches forward six inches with the right and drop the left hand by side. Branches returned to position.

Order Arms.—Grasp branch held in front of body with right, let go with left hand, move branch to right.

Right Shoulder Arms.—Branches are brought up to right shoulder, being inclined to an angle of forty-five degrees.

Position. Turn to Right and Left.—First six children turn to right, second six to left.

March.—They march to opposite sides of platform.

Right About Face.—The two lines turn so as to face each other.

Present Arms.—As before.

Position. Support Arms.—Grasp branch with left hand, elevate it, then seize it with right hand and pass it to the left side, holding it in position on the left shoulder with the lower end of branch just below the left arm, which is held across the waist, the right arm hanging straight down.

Reverse Arms.—Hold branch top downward in the last named position with the right hand.

Forward in Line, Charge.—Keeping branches in last named position, each line charge upon the other across the platform.

Position.—Both lines take positions they have just left.

Forward, March.—Lines advance toward each other, branches held in "position."

Halt.—Lines halt about five feet apart.

Salute.—(Military). Each soldier salutes opposite.

Front Face.—Each line faces the school. (The two children representing the oak, having taken the center of the line

on first entering the room, are by this last move facing the school. They now recite. As the remaining couples recite, each couple comes down to the front and forms the line as at first, to right and left of oaks.)

5. RECITATIONS BY FORESTERS.

First pupil:

A glorious tree is the old gray oak;
He has stood for a thousand years,
Has stood and frowned on the trees around
Like a king among his peers.
As around their king they stand, so now,
When the flowers their pale leaves fold,
The tall trees round him stand arrayed
In their robes of purple and gold.

—HILL

Second pupil:

A little of thy steadfastness,
Rounded with leafy gracefulness,
Old oak, give me,—
That the world's blasts may round me blow,
And I yield gently to and fro,
While my stout-hearted trunk below
And firm-set roots unshaken be.

—LOWELL

Third pupil:

Green is my canopy in June,
In my branches birds are all in tune,
In the fall a cloak of red,
Wraps me up to my tall proud head.

Fourth pupil:

Take the birds with their songs so sweet,
Take the grass and the rustic seat,
Take them all, but leave to me
This one sun-kissed maple tree.

Fifth pupil:

A lady so fine came out of the woods,
All dressed in silvery gray,
Whether satin or velvet or soft woolen goods,
I'm sure I'm not able to say.
I asked a young ash which grew by the wall
To tell me the fine lady's name;
"Oh yes," he made answer, "no trouble at all,
She has a most enviable fame."

Sixth pupil:

"So modest is she, so dainty and sweet,
Most dearly I love her, 'tis true,
But if no objection the young lady brings,
I'll make her acquainted with you."
"Miss Willow, my friend Mr. Love-Nature here,
Your friend ship has gallantly sought;"
Then in a low whisper he laughingly said,
"We call her Miss Pussy for short."

—SUSIE E. KENNEDY.

Seventh pupil:

Hail to the chief who in triumph advances!
Honored and blessed be the ever green Pine!
Heaven send it happy dew,
Earth send it sap anew,
Gayly to burgeon and broadly to grow.

—SCOTT.

Eighth pupil:

If Mother Nature patches
The leaves of trees and vines,
I'm sure she does her darning
With needles of the pines.
They are so long and slender;
And sometimes, in full view,
They have their thread of cobwebs,
And thimbles made of dew.

—W. H. HAYNE.

Ninth pupil:

Hail to the Elm! the brave old Elm!
Our last lone forest tree,
Whose limbs outstand the lightning's brand,
For a brave old Elm is he!
For fifteen score of full-told years,
He has borne his leafy prime.

Tenth pupil:

Yet he holds them well, and lives to tell
His tale of yester time!
Then hail to the Elm, the green-topped Elm!
And long may his branches wave,
For a relic is he, the gnarled old tree,
Of the times of the good and brave.

Eleventh pupil:

When the great wind sets things whirling,
And rattles the window panes,
And blows the dust in giants
And dragons tossing their manes;
When the willows have waves like water,
And children are shouting with glee,
When the pines are alive, and the larches—
Then hurrah for you and me!
In the tip o' the top o' the tip o' the tip of
The popular poplar tree.

Twelfth pupil:

Don't talk about Jack and the Beanstalk—
He did not climb half so high!
And Alice, in all her travels,
Was never so near the sky!
Only the swallow, a-skimming
The storm cloud over the sea—
Knows how it feels to be flying
When the gusts come strong and free—
In the tip o' the top o' the tip o' the tip
Of the popular poplar tree.

—BLANCHE WILLIS HOWARD.

(The children now finish the drill.)

Turn to Right and Left.—As before.

March.—They march to opposite sides of the platform.

Right About Face.—Two lines face each other.

Touch Branches.—Each waves branch over right shoulder once, then brings it sufficiently far forward to touch that of his partner opposite.

By Twos, March.—The two at rear of platform lower branches from last named position to shoulders, and march between

MARCHING SONG.



1 There's Springtime in the air
When the happy robin sings,
And earth grows bright and fair,
Covered with the robe she brings.

Cho. March, oh, march, 'tis Arbor Day,
Joy for all and cares away;
March, oh, march, from duties free
To the planting of the tree.

2 There's Springtime in the air
When the buds begin to swell,
And woodlands, brown and bare,
All the summer joys foretell.—*Cho.*

3 There's Springtime in the air
When the heart so fondly prays;
This tribute, sweet and rare,
We to mother earth may raise.—*Cho.*

the lines and under the branches of the others; when these have advanced a pace or two the next couple follow, and so on till at last all are marching to their seats with the branches upon their shoulders.

6. CONCERT RECITATION.—*School.*

Hurrah for the kingly oak,
For the maple, the forest queen;
For the lords of the emerald cloak.
For the ladies in living green.
For the beautiful trees a song—
The peers of a glorious realm—
The willow, the pine and the elm;
The poplar, stately and strong.

7. RECITATION.

Which is the best of all these trees?
Answer me, children, if you please.
Is it the oak, the king of the wood,
That for a hundred years has stood?
The graceful elm or the poplar tall,
The willow or maple we ne'er wish to fall?
Is it the solemn and gloomy pine,
With its million needles, so sharp and fine?
Let us cast our votes and quickly see
Which is our choice for Wisconsin's tree.

8. DISTRIBUTION OF BALLOTS.

9. MARCHING SONG.

□ (Children march round the room and as each passes the teacher's desk he drops his ballot into the box provided for it.)

10. ANNOUNCE NAME OF CHOSEN TREE.

11. MARCH TO THE GROUNDS.

12. THE PLANTING OF THE TREE.

13. CONCERT RECITATION.—*School.*

He who plants a tree plants a hope.
Rootlets up through fibres blindly grope;
Leaves unfold into horizons free.
So man's life must climb
From the clods of time
Unto Heaven sublime.
Cans't thou prophesy, thou little tree,
What the glory of thy boughs shall be?

—LARCUM.

14. SONG, "AMERICA"—*Stanzas 3 and 4.*

Let music swell the breeze
And ring from all the trees
Sweet freedom's song!
Let mortal tongues awake;
Let all that breathe partake;
Let rocks the silence break, —
The sound prolong!

Our father's God! to Thee,
Author of liberty,
To Thee we sing:
Long may our land be bright
With freedom's holy light;
Protect us by Thy might,
Great God, our King!

WISCONSIN STATE HORTICULTURAL SOCIETY,

SECRETARY'S OFFICE,

EVANSVILLE, Wis., March 1st, 1893.

To Superintendents, Officers and Teachers of Public Schools:

The officers of the Wisconsin State Horticultural Society most heartily join in the request of Superintendent Oliver E. Wells, that every school in Wisconsin observe Arbor Day with suitable exercises as outlined in this circular.

Beautiful school grounds lead to beautiful homes; they will serve to link the boys and girls to the homes of their youth with endearing affection. It is a pleasing task for us to recommend to you a list of trees well adapted for the school grounds of our state. Many of these can, perhaps, be procured from the woods near your school grounds, but all can be had from a nurseryman, and, as a general rule, the nursery trees are the best to plant, because, as they have been once or twice transplanted, they have better root systems.

We do not recommend taking evergreens from the forest unless they are very small, and these are not desirable.

In setting out trees it is very important that the work be well done; therefore we say, observe strictly the rules laid down in this circular about planting trees.

LIST OF TREES AND SHRUBS FOR PLANTING.

Evergreens.—Norway Spruce, White Spruce, White Pine, Balsam Fir, Austrian Pine, Scotch Pine, American Arbor Vitæ.

Specially adapted to smaller grounds.—Siberian Arbor Vitæ, Hemlock Spruce, Red Cedar, Dwarf Pine, Red or Norway Pine.

Deciduous Trees.—White Elm, Hard or Sugar Maple, Basswood or Linden, Black Walnut, White Ash, Green Ash, Cut-Leaf or Weeping Birch, White or Canoe Birch, Wild Black Cherry, American Larch, Box Elder or Ash-Leaf Maple, Wisconsin Weeping Willow.

Adapted to smaller grounds.—Hackberry, American and European Mountain Ash, Oak-Leaf Mountain Ash, Black Alder.

Ornamental Hardy Shrubs.—White, Purple and Persian Lilacs, Snowball, Tartarian Honeysuckle, Syringa, Ninebark, Purple Leaf Berbery, Wigelia Rosea, Scarlet Dogwood, European Strawberry Tree.

Hardy Climbers.—American Ivy or Virginia Creeper, Scarlet Honeysuckle, Fragrant Honeysuckle, Virgin's Bower, Bitter Sweet.

OUR PLANT DISTRIBUTION LAST YEAR.

How many of the pupils remember it?

It was more successful than any of us expected. Under President Thayer's generous offer 8,568 strawberry plants were distributed to 1,443 pupils, residing in 243 school districts. Many reports were received from these last October, and the interest shown in the subject has been so great that we propose to renew the offer this year under substantially the same conditions.

CONDITIONS OF THE PLANT DISTRIBUTION.

(1.) *The distribution of plants will be made only in such district schools as shall observe Arbor Day, after the plan proposed in the accompanying Arbor Day circular, or after a similar plan; and in such schools only upon condition that the teacher will volunteer to act as the agent of this society in determining the eligibility of applicants for plants, in collecting and forwarding transportation fees, with a list of the names of the applicants entitled to receive plants and in attending to the distribution of the plants when the same shall be received. The teacher may depute this work to some responsible pupil or other person, provided he or she shall exercise care that it is properly done.*

(2.) *A transportation fee of five cents will be required of each eligible applicant for plants, this fee to be paid to the teacher, or person appointed by him or her to make such collection, and the teacher will forward the amount thus received, in postage stamps (less two cents which may be retained for posting letter) to CARL H. POTTER, Corresponding Secretary, Wisconsin State Horticultural Society, MADISON, WIS., within five days succeeding Arbor Day.*

(3.) *No pupil shall be entitled to receive plants who has not attained the age of ten years, and who has not attended school within the district in which he or she resides for at least four consecutive weeks during the current school year.*

(4.) *Not more than two pupils belonging to any one family shall be entitled to receive plants.*

(5.) *No pupil shall be entitled to receive plants who does not agree to plant and care for the same in accordance with the directions accompanying the plants.*

Every pupil who receives plants will be expected to write on a postal card, during the first week in October, 1893, the number of plants that have lived through the season, and the number of young plants



b89080560386a

that have grown from the same, and to direct and mail such postal card to the corresponding secretary of this society, as named above. Neglect to make this report will render any recipient of plants ineligible in future plant distributions of this society.

YOUNG PEOPLE'S HORTICULTURAL SOCIETIES.

It gives us much pleasure to state that quite a number of such societies were organized last year, and we earnestly recommend that in every school district in which there are ten or more pupils, who are eligible to receive plants under the conditions named above, that they form themselves into a young people's horticultural society, to be governed by the following constitution, provided that the teacher of the school or some other person at least eighteen years of age, who understands the elements of parliamentary usage, will volunteer to act as presiding officer at the meetings of such society.

All such societies, when organized, are requested to send the name and location of the society and the officers of the same, with their postoffice address, to B. S. Hoxie, Secretary, Evansville, Wis., for publication in the volume of transactions of the state horticultural society.

CONSTITUTION FOR YOUNG PEOPLE'S HORTICULTURAL SOCIETY.

(1.) This organization shall be known as the (name to be chosen by members) Horticultural Society.

(2.) Its officers shall consist of a president, who shall preside at all meetings; a secretary, who shall record the minutes of the meetings and conduct the correspondence of the society, subject to the written order of the president. These officers shall be elected by ballot at the spring meeting of the society, and shall continue in office until their successors are elected.

(3.) Pupils eligible to receive plants under the conditions specified in this circular, who have applied for the same, and who have paid the required fee, shall be charter members of this society. Such charter members may elect other persons over twelve years of age to membership by a two-thirds vote. Such elected persons shall pay to the secretary a membership fee of five cents.

(4.) A majority of the members shall be necessary to constitute a quorum for the transaction of business.

(5.) Not less than two meetings shall be held by this society during each year; one to be called the spring meeting, to be held on Arbor Day; the other, to be called the fall meeting, on the first Tuesday of October. At each of these meetings at least two papers shall be presented on some horticultural subject; the papers and subjects to be assigned by the president. Other meetings may be held at the call of the president.

At both the spring and fall meetings, the secretary of this society must send a report to the corresponding secretary of the Wisconsin Horticultural Society, of the number of members, the number of meetings held since the last report, the number and titles of the papers presented; and, at the fall meeting, a report must be sent of the condition of all plants furnished by the state society, as prescribed elsewhere in this circular.

SPECIAL NOTICE TO THOSE WHO RECEIVED PLANTS LAST SEASON.

Those pupils who received strawberry plants last spring may have their choice this season between six strawberry plants and two raspberry plants. It is especially important that such pupils state distinctly in their application whether they desire raspberry or strawberry plants.

A REWARD TO THOSE PUPILS WHO SENT IN THEIR REPORTS LAST OCTOBER.

Through the generosity of Mr. W. D. Boynton, of Shiocton, Wis., those pupils who received strawberry plants last season, and made a report to Carl H. Potter in October as required, will receive, if they apply for the same, and agree to plant out and take good care of it, one small Norway spruce tree without charge. All correspondence relative to the tree and plant distribution must be conducted by

CARL H. POTTER, Madison, Wis.,

Corresponding Secretary.

The newspapers of the state are earnestly requested to co-operate with us by calling the attention of school district officers, and their readers, to the subject matter of this circular, to the end that Arbor Day may be properly observed throughout our state.

M. A. THAYER, *President.*

Sparta.

B. S. HOXIE, *Secretary,*
Evansville.



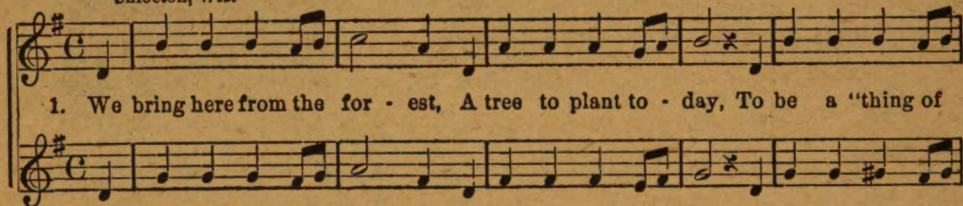
WISCONSIN ARBOR DAY SONG.

THE PLANTING OF THE TREE.

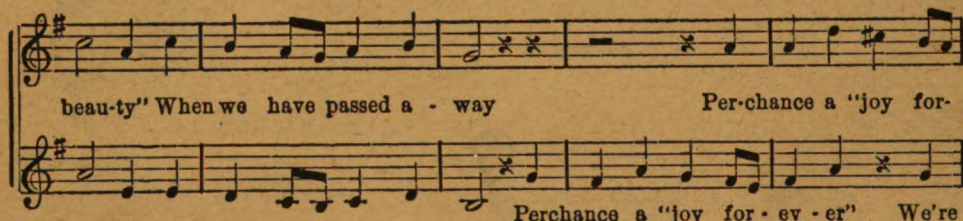
EBEN E. REXFORD.

Shiocton, Wis.

GUMBERT.



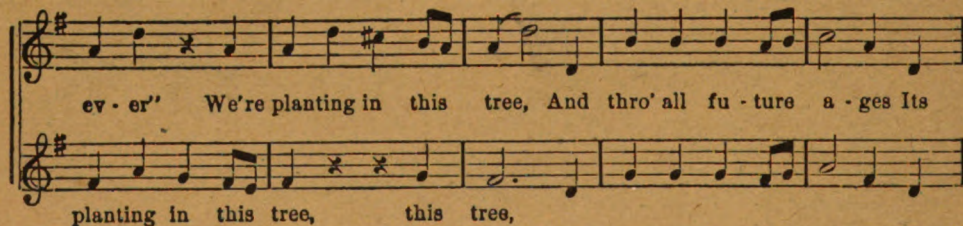
1. We bring here from the for - est, A tree to plant to - day, To be a "thing of



beau-ty" When we have passed a - way

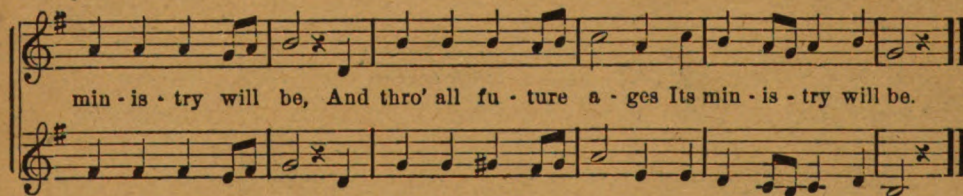
Per-chance a "joy for-

Perchance a "joy for - ev - er" We're



ev - er" We're planting in this tree, And thro' all fu - ture a - ges Its

planting in this tree, this tree,



min - is - try will be, And thro' all fu - ture a - ges Its min - is - try will be.

2 We cannot know what lessons

This tree may teach to men,—

Deep truths of God and Nature

Eluding book and pen.

We plant it here, believing

That in its own wise way

It will live out the mission

God dow'ns it with to-day.

3 Bring to this tree, O Springtime,

Your sunshine and your rain;

Coax from the branch, each season,

The fair green leaves again.

Be kind to it, O Summer,

And in the years to be

May children say, "God bless them

Who gave this dear old tree!"